

Nakase Nursery/Toll Brothers Project

Final Environmental Impact Report

SCH No. 2018071035

Volume II



City of Lake Forest
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

December 2019

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FINAL ENVIRONMENTAL IMPACT REPORT

**NAKASE NURSERY/TOLL BROTHERS PROJECT
CITY OF LAKE FOREST, CALIFORNIA
SCH #2018071035**

Submitted to:

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- K: PUBLIC SERVICE AND UTILITY QUESTIONNAIRE RESPONSES
- L: TRAFFIC IMPACT ANALYSIS
- M: VISUAL ANALYSIS
- N: FISCAL IMPACT ANALYSIS
- O: TRIBAL CONSULTATION CORRESPONDENCE

LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
µg/L	micrograms per liter
303(d) list	2014/2016 California 303(d) List of Water Quality Limited Segments
A-1	Agricultural District
AAQS	ambient air quality standards
AB	Assembly Bill
ac	acre/acres
ACMs	asbestos-containing materials
ACOE	United States Army Corps of Engineers
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADT	average daily trips
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
af	acre-feet
afy	acre-feet per year
AGR	agricultural supply
AHIP	Affordable Housing Implementation Plan
AMI	Advanced Metering Infrastructure
amsl	above mean sea level
Annex I	industrialized nations
APA	American Planning Association
APN	Assessor's Parcel Number
APR	Annual Progress Report
APS	Alternative Planning Strategy
AQMP	Air Quality Management Plan
Area Plan	Nakase Property Area Plan
Arid West Supplement	ACOE Wetland Delineation Manual: Arid West Supplement
AST	aboveground storage tank
ASTM	American Society of Testing Materials

BAAQMD	Bay Area Air Quality Management District
Basin	South Coast Air Basin
BAU	business as usual
Bcf	billion cubic feet
BDO	Business Development Overlay
bgs	below ground surface
BIOL	preservation of biological habitats of special significance
BMP	Best Management Practice
BMR	Below Market Rate
C ₂ F ₆	hexafluoroethane
C ₂ H ₆	ethane
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	Governor's Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
California DWR	California Department of Water Resources
California MUTCD	California Manual on Uniform Traffic Control Devices
California Register	California Register of Historical Resources
Cal-IPC	California Invasive Plant Council
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CBIA	California Building Industry Association
CC&Rs	Covenants, Conditions, and Restrictions

CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CED	California Energy Demand
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CESA	California Endangered Species Act
cf	cubic feet
CF ₃ CH ₂ F	HFC-134a
CF ₄	tetrafluoromethane
CFC	California Fire Code
CFCs	chlorofluorocarabons
CFP	California Fully Protected
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH ₃ CHF ₂	HFC-152a
CH ₄	methane
CHF ₃	HFC-23
CHRIS	California Historical Resources Information System
City	City of Lake Forest
CIWMP	Countywide Integrated Waste Management Plan
Cleveland National	Cleveland National Forest Foundation v. San Diego Association of Governments (2017) 3 Cal.5th 497
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plan Society
CO	carbon monoxide

CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
COMM	commercial and sport fishing
County	County of Orange
CPT	cone penetrometer test
CPUC	California Public Utilities Commission
CRC	California Residential Code
CTMP	Construction Traffic Management Plan
CTR	California Toxics Rule
CUPA	Certified Unified Program Agencies
CWA	Clean Water Act
cy	cubic yards
DAMP	Drainage Area Management Plan
dB	decibels
dba	A-weighted decibels
dba L _{eq}	equivalent continuous sound level measured in A-weighted decibels
DDT	dichlorodiphenyltrichloroethane
De Novo	De Novo Planning Group
DOC	California Department of Conservation
DOGGR	California Department of Oil, Gas, and Geothermal Resources
DTSC	Department of Toxic Substances Control
du	dwelling unit
du/ac	dwelling units per acre
EDR	Environmental Data Resources
EIA	United States Energy Information Administration
EIR	Environmental Impact Report
EJ	Environmental Justice
EMF	electromagnetic field
EO	Executive Order
EOC	Emergency Operations Center
EOP	Emergency Operations Plan

EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
EST	estuarine habitat
EV	electric vehicle
FAR	floor-to-area ratio
FBI	Federal Bureau of Investigation
FD	Fusarium Dieback
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FRA	Federal Responsibility Area
FRAP	Fire and Resources Assessment Program
FSZ	Farmland Security Zone
ft	foot/feet
FTA	Federal Transit Administration
gal	gallon/gallons
GCC	global climate change
Gg	gigagrams
GHG	greenhouse gas
GIS	geographic information system
GLA	Glenn Lukos Associates, Inc.
GPA	General Plan Amendment
gpd	gallons per day
gpm	gallons per minute
GPS	global positioning system
gpy	gallons per year
GSA	<i>groundwater sustainability agency</i>

GWh	gigawatt-hours
GWR	groundwater recharge
H ₂ O	water vapor
HA	Hydrologic Area
HCA	Orange County Health Care Agency
HCD	California Department of Housing and Community Development
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
HI	Hazard Index
HMMP	Habitat Mitigation Monitoring Plan
HMP	Habitat Management Plan
HMSS	Hazardous Materials Services Section
HOA	Homeowner's Association
HQTA	High-Quality Transit Area
HRER	Historical Resources Evaluation Report
HRI	California State Historic Resources Inventory
HSA	Hydrologic Subarea
HU	Hydrologic Unit
HVAC	heating, ventilation, and air conditioning
I-5	Interstate 5
ICC	International Code Council
ICU	intersection capacity utilization
IFC	International Fire Code
in/sec	inches per second
IND	industrial service supply
IPCC	Intergovernmental Panel on Climate Change
IRWD	Irvine Ranch Water District
IS/NOP	Initial Study/Notice of Preparation
ISHB	invasive shot hole borer beetle
ITE	Institute of Transportation Engineers

IWMP	Integrated Waste Management Plan
kBTU/yr	thousand British thermal units per year
KSHB	Kuroshio shot hole borer
kV	kilovolts
kWh	kilowatt-hours
kWh/yr	kilowatt-hours per year
L ₅₀	median noise level
lbs/sf	pounds per square foot
LCFS	Low Carbon Fuel Standard
LEA	Local Enforcement Agency
LED	light-emitting diode
Leq	equivalent continuous sound level
LESA	Land Evaluation and Site Assessment
LFTAM	Lake Forest Traffic Analysis Model
LFTM Program	Lake Forest Traffic Mitigation Program
LID	Low Impact Development
LIP	Local Implementation Plan
LOMR	Letter of Map Revision
LOS	level of service
LRA	Local Responsibility Area
LSAA	Lake and Streambed Alteration Agreement
LSTs	localized significance thresholds
MAR	marine habitat
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MFI	median family income
mg/L	milligrams per liter
mgd	million gallons per day
mi	mile/miles
mi/day	miles per day
mL	milliliter

MLD	Most Likely Descendant
MMT	million metric tons
MMT CO ₂ e	million metric tons of carbon dioxide equivalent
Model Ordinance	Model Water Efficient Landscape Ordinance
mpg	miles per gallon
mph	miles per hour
MPN	most probable number
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MT	metric tons
MT CO ₂ e/SP/yr	million tons of carbon dioxide equivalent per Service Population per year
MTBE	methyl tertiary-butyl ether
MUN	municipal and domestic supply
MW	megawatts
MWD	Metropolitan Water District
MWDOC	Metropolitan Water District of Orange County
MWH	megawatt hour
MWRP	Michelson Water Recycling Plant
N ₂	nitrogen
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NAV	navigation
NCCP	Natural Communities Conservation Plan
NCCP/HCP	Natural Communities Conservation Plan/Habitat Conservation Plan
NF ₃	nitrogen trifluoride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NHTSA	National Highway Traffic Safety Administration

NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NITM Program	North Irvine Transportation Mitigation Program
NMA	Neighborhood Mobility Area
NO	nitric oxide
NO ₂	nitrogen dioxide
NOI	Notice of Intent
Non-Annex I	developing nations
non-VHFHSZ	non-very high fire hazard severity zone
NOP	Notice of Preparation
North Orange County MS4 Permit	Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NR	Noise Reduction
NRCS	Natural Resource Conservation Service
O ₂	oxygen
O ₃	ozone
OAL	Office of Administrative Law
OCFA	Orange County Fire Authority
OCFCD	Orange County Flood Control District
OCPL	OC Public Libraries
OCPW	Orange County Public Works
OCSD	Orange County Sheriff's Department
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
OCWR	Orange County Waste and Recycling
OEHHA	Office of Environmental Health Hazard Assessment
OES	State Office of Emergency Services

OHWM	ordinary high water mark
OPR	State Office of Planning and Research
OSA	Opportunity Study Area
OSA PEIR	Opportunities Study Area Program Environmental Impact Report
Pb	lead
PC 3	Rancho de Los Alisos Planned Community
PC 7	Baker Ranch Planned Community
PC 8	Foothill Ranch Planned Community
PC 9	Portola Hills Planned Community
PCBs	polychlorinated biphenyls
PCE	passenger car equivalent
PCH	Pacific Coast Highway
PEA	Preliminary Environmental Assessment
PFCs	perfluorocarbons
PGA	peak ground acceleration
pH	percentage of hydrogen
PM	particulate matter
PM ₁₀	particulate matter less than 10 microns in size
PM _{2.5}	particulate matter less than 2.5 microns in size
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppb	parts per billion
ppm	parts per million
ppt	parts per trilliion
PPV	peak particle velocity
PRC	Public Resources Code
PRDs	Permit Registration Documents
PRIMP	Paleontological Resources Impact Mitigation Program
PROC	industrial process supply
Project	Nakase Nursery/Toll Brothers Project
PSH	permanent supportive housing
PSHB	polyphagous shot hole borer beetle

psi	pounds per square inch
RARE	rare, threatened, or endangered species
RCM	Regulatory Compliance Measure
RCP	Regional Comprehensive Plan <i>or</i> reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act of 1976
RCRA-SQG	Resource Conservation and Recovery Act-Small Quantity Generator
RDMD	Orange County Resources and Development Management Department
REC1	water contact recreation
REC2	non-contact water recreation
RECLAIM	Regional Clean Air Incentives Market
RECs	Recognized Environmental Conditions
RHNA	Regional Housing Needs Assessment
ROGs	reactive organic gases
RPS	Renewables Portfolio Standard
RRFB	Rectangular Rapid Flashing Beacon
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SAFE Vehicles Rule	The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks
SAMP	Special Area Management Plan <i>or</i> Sub-Area Master Plan
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy

SEER	Seasonal Energy Efficiency Ratio
SEMS	Standardized Emergency Management System
sf	square foot/feet
SF ₆	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act of 2014
SHEL	shellfish harvesting
SHL	California Historical Landmarks
SHMA	Seismic Hazard Mapping Act
SHMP	State Hazard Mitigation Plan
SHPO	State Historic Preservation Officer
SIP	<i>State Implementation Plan</i>
SLF	Sacred Lands File
SLPS	Short-Lived Climate Pollutant Strategy
SMA	Special Maintenance Area
SMARTS	Stormwater Multiple Application and Report Tracking System
SO ₂	sulfur dioxide
SO ₄	sulfates
SoCalGas	Southern California Gas Company
SO _x	oxides of sulfur
SP	Service Population
SPHI	California Points of Historical Interest
SPWN	spawning, reproduction and development
sq mi	square mile/miles
SR-1	State Route 1
SR-241	State Route 241
SR-55	State Route 55
SR-91	State Route 91
SRA	State Responsibility Area
SRRE	Source Reduction and Recycling Element
SSC	Species of Special Concern
STARS	Sheriff's Team of Active Retired Seniors

State CEQA Guidelines	Guidelines for the California Environmental Quality Act
STC	sound transmission class
SVUSD	Saddleback Valley Unified School District
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCA	Transportation Corridor Agencies
TCE	trichloroethylene
TGD	Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs)
TIA	Traffic Impact Analysis
TMDL	Total Maximum Daily Load
tpd	tons per day
tpy	tons per year
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife
USGS	United States Geological Survey
UST	underground storage tank
UV	ultraviolet
UWMP	Urban Water Management Plan
v/c	volume-to-capacity
VCA	Voluntary Cleanup Agreement
VHFHSZ	very high fire hazard severity zone
Visual Analysis	Nakase Property Area Plan Visual Analysis
VMT	vehicle miles traveled
VOC	volatile organic compound
vph	vehicles per hour

vplph	vehicles per lane per hour
WARM	warm freshwater habitat
WDID	Waste Discharge Identification Number
WDR	Waste Discharge Requirements
Wetland Manual	ACOE 1987 Wetland Delineation Manual
WILD	wildlife habitat
WQMP	Water Quality Management Plan
WSA	Water Supply Assessment
WSAA	Watershed Streambed Alteration Agreement
WUI	wildland-urban interface
ZEV	zero emission vehicle
ZNE	zero net energy

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

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

This EIR has been prepared by the City of Lake Forest (City) to evaluate environmental impacts associated with the proposed Nakase Nursery/Toll Brothers Project (Project); to discuss alternatives; and to propose mitigation measures that will minimize, offset, or otherwise reduce or avoid the identified potentially significant environmental impacts.

This EIR has been prepared pursuant to the requirements of CEQA and the *State CEQA Guidelines*. The City is the Lead Agency, and as such, has reviewed all submitted drafts, technical studies, and reports for consistency with applicable City regulations and policies and has commissioned the preparation of this EIR to reflect its own independent judgment.

Data for this EIR were obtained from on-site field observations; discussion with affected agencies; review of adopted plans and policies; review of available studies, reports, and data; and specialized environmental assessments prepared for the Project (e.g., air quality, noise, and traffic).

The Executive Summary is intended to highlight the major areas of importance in the environmental analysis for the proposed Project as required by *State CEQA Guidelines* Section 15123. The Executive Summary includes a brief description of the proposed Project, areas of controversy known to the City, including issues raised by agencies and the public, a summary of the significant unavoidable impacts of the proposed Project, and a summary of alternatives evaluated in the EIR. This Executive Summary also provides a table summarizing (1) the potential environmental impacts that would occur as a result of Project implementation and operation; (2) the level of significance prior to implementation of mitigation measures; (3) regulatory compliance measures and mitigation measures that avoid or reduce the significant impacts of the proposed Project, and (4) the level of significance after mitigation measures are implemented.

1.2 SUMMARY OF PROJECT DESCRIPTION

The Nakase property (Project site) is located in the north-central portion of Lake Forest in Orange County, California. The Project site is bounded on the northwest by Bake Parkway, on the northeast by Rancho Parkway, on the southeast by the Serrano Creek Trail, and on the southwest by commercial, industrial, and office uses, with Dimension Drive beyond. State Route 241 (SR-241) is approximately 0.07 mile (mi) northeast of the Project site.

The Project proposes the approval of the “Nakase Property Area Plan” (referred to hereafter as the Area Plan and/or the Project) (Woodley Architectural Group 2019), which would facilitate the

development of the 122-acre (ac) Project site as a master planned community. The Area Plan would establish guidelines for the future development of the planned community, which would consist of up to 675 single-family residential units (contained in 5 distinct neighborhoods), 101 affordable housing units for senior citizens with up to 10 of these units available for permanent supportive housing, an elementary school that could accommodate up to 1,000 Kindergarten to Sixth Grade students, parks and open space, and an internal circulation system.

1.3 AREAS OF CONTROVERSY

Pursuant to *State CEQA Guidelines* Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City or were raised during the scoping process. The City held a public scoping meeting at Lake Forest City Hall on Wednesday, July 25, 2018, to present the proposed Project and to solicit input from interested parties regarding environmental issues that should be addressed in this EIR. The material environmental issues and concerns raised in response to the Notice of Preparation (NOP) or at the scoping meeting included:

- **Traffic:** Concerns about additional traffic on Bake Parkway and the appropriate number of traffic lanes on Bake Parkway, evaluation of a traffic signal coordination program along Bake Parkway, concern regarding traffic conditions during peak hours, pedestrian and bike safety, parking issues, traffic-related air and noise pollution, concern with vehicle queuing and parking on nearby roads, concern about school-related traffic impacts, and concern about truck and motorcycle traffic on Bake Parkway.
- **Noise:** Concerns about traffic-related increases in noise pollution, suggestions of noise mitigation, including special pavement, triple-paned windows, or a noise barrier along Bake Parkway, concern with noise level along Bake and Rancho Parkways, concern about existing truck and motorcycle noise along Bake Parkway, concern about lack of enforcement of the City's noise ordinance, and concern about elevated backyard noise levels.
- **Air Quality:** Concern about additional vehicle emissions, concern about worsening air quality in adjacent neighborhoods, concern about particulate matter and carcinogens along Bake Parkway, suggestion to conduct sampling for particulate matter in neighborhoods along Bake Parkway between Trabuco Road and Portola Parkway, suggestion to prepare a health risk assessment for the project, suggestion to implement mitigation measures for the proposed project, and suggestion to adhere to guidelines from the South Coast Air Quality Management District (SCAQMD) and its Air Quality Handbook.
- **Alternatives:** Suggestion to evaluate the development of a park and/or garden on the Nakase site, suggestion to make the site into a community garden or forest, suggestion to more clearly define the Project's scope and evaluate a range of alternatives, and suggestion to pursue alternatives that would substantially lessen the project's air quality impacts.
- **Biological Resources:** Concern about potential impacts to coastal sage scrub and associated species, suggestion to include mitigation measures for potential impacts to riparian corridors and wetlands, suggestion to complete jurisdictional delineation, apply for Lake and Streambed

Alteration Agreement, and to satisfy the California Endangered Species Act Incidental Take Permit requirements, suggestion to avoid impacts where feasible and to mitigate for impacts to rare natural communities and sensitive plants, animals, or habitats, and concern to avoid impacts to nesting or migratory birds.

- **Hazards and Hazardous Materials:** Suggestion to complete a Water Pipeline Risk Assessment and Electromagnetic Field (EMF) study for the proposed school site, suggestion that the significance conclusion related to wildland fire hazards be revised to reflect a Fuel Modification Conceptual Plan and a Fire Protection Plan with an Ember Mitigation have been approved for the project, and suggestion to ensure that floodplains are identified and structures conform to Federal Emergency Management Agency (FEMA) regulations with regard to placement adjacent to flood hazards.
- **Hydrology:** Suggestion to review all local hydrology and hydraulic analyses to confirm the Project is protected from erosion and flooding, concern about increased runoff caused by the project, suggestion to incorporate mitigation measures to reduce impacts to hydrology, erosion, and flooding, and concerns about impacts to water quality and storm water runoff.
- **Land Use/Planning:** Opposition to zoning change for the nursery, concern about the Project's consistency with the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and suggestion to include a direct comparison with the plan, suggestion to incorporate practices and policies that would reduce greenhouse gas (GHG) emissions in accordance with Assembly Bill 32 and Senate Bill 375 into the Area Plan, and suggestion to ensure consistency with applicable general plan and regional plans.
- **Public Services:** Suggestion to implement mitigation measures to public services, including fire services, and concern about potential increase in demand for public services.

Please note that this is not an exhaustive list of areas of controversy, but rather key issues that were raised during the scoping process. This EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures and/or alternatives designed to reduce or eliminate potentially significant impacts. Appendix A to this EIR includes the NOP and copies of written comments received in response to the NOP, comments received via Facebook Live at the Public Scoping Meeting, as well as written comment cards received in response to the public scoping meeting. Appendix A also includes a comment summary.

1.4 SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(b) of the *State CEQA Guidelines* requires that an EIR describe significant environmental impacts that cannot be avoided, including those effects that can be mitigated but not reduced to a less than significant level. The following is a summary of the impacts that are considered significant adverse and unavoidable after all mitigation is applied. These impacts are also described in detail in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

1.4.1 Agricultural Resources

The proposed Project would conflict with the existing A-1 zoning and would convert 119.2 ac of Unique Farmland to non-agricultural uses, which would result in a significant impact to agricultural resources. Mitigation was considered to reduce the impact of the conversion of 119.2 ac of Unique Farmland to non-agricultural uses. However, the mitigation measures were not considered feasible; therefore, impacts pertaining to the conversion of Unique Farmland to a non-agricultural use from implementation of the proposed Project would be significant and unavoidable.

1.4.2 Greenhouse Gas Emissions

The proposed Project would be designed in compliance with existing regulations aimed at reducing GHG emissions. Specifically, the project would meet the 2019 Building Energy Efficiency Standards (California Code of Regulations [CCR] Title 24) and the California Green Building Standards Code (CALGreen). Although compliance with CCR Title 24 and CALGreen would help to reduce the proposed Project's GHG emissions, the overall emissions attributable to the proposed Project are expected to exceed the SCAQMD thresholds of 3.84 million tons of carbon dioxide equivalent per Service Population per year (MT CO₂e/SP/yr) for 2025 and 2.88 MT CO₂e/SP/yr for 2030. Therefore, the proposed Project would result in a significant unavoidable project impact and significantly contribute to an unavoidable cumulative impact related to GHG emissions and conflict with an applicable GHG reduction plan, policy, or regulation.

1.5 ALTERNATIVES

1.5.1 Alternatives Evaluated in this EIR

Public Resources Code (PRC) Section 21100 and *State CEQA Guidelines* Section 15126 require an EIR to identify and discuss a No Project Alternative and a reasonable range of alternatives to the proposed Project that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental impacts. The following four alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the proposed Project but that may avoid or substantially lessen any of the significant impacts of the proposed Project. Therefore, the alternatives considered in this EIR include the following:

- **Alternative 1 – No Project Alternative:** CEQA requires analysis of a “No Project” Alternative. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project. According to *State CEQA Guidelines* Section 15126.6(e)(3)(C), the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. Because the current owners of the Project site have indicated their intent to sell the property, it is unlikely the Project site would continue to be used as a commercial nursery. As shown on Figure 3.5, General Plan Land Use and Business Development Overlay, the Project site is designated for Business Park uses on the City's General Plan Land Use Map. For this reason, under Alternative 1, it is assumed that while the proposed Area Plan would not be developed,

the Project site would not remain in the existing condition, and the Project site would be developed to the maximum intensity allowed under the existing General Plan designation of Business Park. The Business Park designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. Alternative 1 would include 1,841,700 square feet (sf) of Business Park use.

- **Alternative 2 – Urban Industrial/Residential:** The Project site would be developed in accordance with the Urban Industrial-Residential land use designation, which is a new land use designation being considered in the Lake Forest General Plan update. The Urban Industrial-Residential land use designation allows for a mix of light industrial and commercial uses at a density of 25 residential units per acre and a maximum floor-to-area ratio (FAR) of 1.0:1. Alternative 2 includes: 592 residential units; 101 senior affordable rental units; 4 ac of commercial/industrial uses; a 12.6 ac school; 24.9 ac of parks, open space, and habitat restoration area; and a 5.6 ac community garden.
- **Alternative 3 – No School Alternative:** Alternative 3 includes: development of 675 single-family residential units; 101 senior affordable rental units; 18.9 ac of parks, open space, and habitat restoration area; and a 2 ac community garden.
- **Alternative 4 – Reduced Project:** Alternative 4 includes: development of 600 single-family residential units; 101 senior affordable rental units; a 12.6 ac elementary school; a 2 ac community garden; and 18.9 ac of parks, open space, and habitat restoration area.

1.5.2 Identification of the Environmentally Superior Alternative

CEQA requires the identification of an Environmentally Superior Alternative among the alternatives evaluated in an EIR. *State CEQA Guidelines* Section 15126.6(e)(2) provides that, if the No Project/No Build Alternative is the Environmentally Superior Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other alternatives. Alternative 4 would have the least impact on the environment because the Project site would be developed at a reduced density, thereby reducing the most of the proposed Project's environmental impacts compared to the other alternatives. However, Alternative 4 would not reduce the significant impacts related to agricultural resources and GHG emissions to a less than significant level. These impacts would remain significant and unavoidable. Additionally, Alternative 4 would potentially meet all of the project alternatives. Accordingly, it is determined that Alternative 4 is the Environmentally Superior Alternative because it would meet all of the project' objectives and result in reduced environmental impacts as compared to the proposed Project.

1.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1.A identifies the potential Project environmental impacts, proposed mitigation measures, and level of significance after mitigation is incorporated into the Project. Environmental topics addressed in this EIR include: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils and Paleontological Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise,

Population and Housing, Public Services, Recreation, Transportation and Traffic, Tribal Cultural Resources, Utilities, and Wildfire.

1.6.1 Secondary Effects of Mitigation Measures

In accordance with *State CEQA Guidelines* Section 15126.4(a)(1)(D), if any mitigation measure would cause one or more significant effects in addition to those that would be caused by the proposed Project, the effects of the mitigation measure shall be discussed. The mitigation measures proposed (as listed on Table 1.A) require the Applicant to provide the City with lighting, grading, excavation or other construction plans, or provide evidence that the Project would adhere to existing programs, regulations, or recommendations in technical reports. The regulations and policies listed in the mitigation measures have been evaluated during their respective adoptions or approval processes. No secondary effects related to the proposed mitigation measures are expected to occur.

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
4.1: Aesthetics			
Threshold 4.1.1: The proposed Project would not have a substantial adverse effect on a scenic vista.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.1.2: 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.	No Impact	No mitigation is required.	No Impact
Threshold 4.1.3: The proposed Project would not conflict with applicable zoning and other regulations governing scenic quality.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.1.4: The proposed Project would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Potentially Significant Impact	<p>Mitigation Measure 4.1.1: Comprehensive Lighting Plan. Prior to issuance of the first building permit for production homes, the Project Applicant/Developer shall prepare a comprehensive lighting plan for review and approval by the City of Lake Forest (City) Director of Community Development or designee. The lighting plan shall be prepared by a qualified engineer and shall address all aspects of lighting, including, but not limited to, height, type, location, infrastructure, and safety. The lighting plan shall include the following in conjunction with other measures as determined necessary by the illumination engineer:</p> <ul style="list-style-type: none"> a. All Project lighting shall be hooded or shielded to focus the light downward and prevent light spillage onto adjacent properties. b. All lights shall be designed and located so that direct light rays are confined to the premises. c. Parking area lighting shall be Illuminating Engineering Society "Full Cut Off" designated or "fully shielded" fixtures so that no light is emitted above the lowest light-emitting part of the fixture. d. Light levels at the property line shall not exceed 0.1 foot-candle (fc) adjacent to the <i>Open Space & Habitat & Restoration Area</i> properties. e. Light standards shall not exceed 20 feet in height. <p>The Lighting Plan shall also include a photometric survey. The photometric survey shall demonstrate that lighting values do not exceed 0.1 fc adjacent to the Open Space & Habitat & Restoration Area and that no direct rays shine onto public streets or adjacent sites.</p>	Less than Significant Impact
4.2: Agricultural Resources			
Threshold 4.2.1: The proposed Project would 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.	Potentially Significant Impact	No feasible mitigation measures are available.	Significant and Unavoidable Impact
Threshold 4.2.2: The proposed Project would not conflict with existing zoning or agricultural use, or a Williamson Act contract.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.2.5: 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.	Less Than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impacts to Agricultural Resources: Because implementation of the proposed Project would result in the conversion, and elimination, of a significant amount of Unique Farmland remaining in the City, the contribution of the proposed Project to the loss of Important Farmland would be cumulatively considerable. Consequently, the cumulative impact of the proposed Project on Unique Farmland would be significant and unavoidable.	Potentially Significant Impact	No feasible mitigation measures are available.	Significant and Unavoidable Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
4.3: Air Quality			
Threshold 4.3.1: The proposed Project would not conflict with or obstruct implementation of the applicable air quality plan	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.3.2: The proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard	Less than Significant Impact	<p>RCM AQ-1: South Coast Air Quality Management District (SCAQMD) Rule 403. The Project Applicant shall ensure the Construction Contractor implements fugitive dust control measures in compliance with SCAQMD Rule 403. The Project Applicant shall include the following fugitive dust control measures for SCAQMD Rule 403 compliance in the Project plans and specifications:</p> <ul style="list-style-type: none"> • All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 miles per hour (mph) per SCAQMD guidelines in order to limit fugitive dust emissions. • The Construction Contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered, with complete coverage of disturbed areas, at least three (3) times daily during dry weather and preferably mid-morning, afternoon, and after work is done for the day. • The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 mph or less. <p>RCM AQ-2: SCAQMD Rule 1113. The Project Applicant shall ensure the Construction Contractor implements measures to control volatile organic compound (VOC) emissions from architectural coatings in compliance with SCAQMD Rule 1113. The Project Applicant shall include the following control measures for SCAQMD Rule 1113 compliance in the Project plans and specifications:</p> <ul style="list-style-type: none"> • Only “Low-Volatile Organic Compounds” paints (no more than 50 grams/liter of VOC) shall be used. <p>RCM AQ-3: SCAQMD Rule 445. Prior to the issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design does not include wood-burning stoves and fireplaces in new development in compliance with SCAQMD Rule 445.</p> <p>RCM AQ-4: Title 24 of the California Code of Regulations (CCR). Prior to issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and the California Green Building Standards Code (CALGreen).</p>	Less than Significant Impact
Threshold 4.3.3: The proposed Project would not expose sensitive receptors to substantial pollutant concentrations	Less than Significant Impact	Refer to RCM-AQ-1	Less than Significant Impact
Threshold 4.3.4: The proposed Project would not result in other emissions (such as those leading to odors adversely affecting a substantial number of people)	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impact related to Air Quality: The proposed Project’s construction- and operation-related regional daily emissions would be less than the SCAQMD significance thresholds for all criteria pollutants. Therefore, the proposed Project would not have a cumulatively considerable increase in emissions, and the proposed Project’s cumulative air quality impacts would be less than significant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.4: Biological Resources			
Threshold 4.4.1: The proposed Project would have a substantial adverse effect, either directly or through habitat modification, on a 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 Services.	Potentially Significant Impact	<p>Mitigation Measure 4.4.1: Burrowing Owls. A qualified biologist shall conduct a pre-construction presence/absence survey for burrowing owls no more than 14 days prior to site disturbance and submit the survey results to the Director of the City of Lake Forest Community Development Department, or designee. If burrowing owls are not detected, no further action is necessary.</p> <p>If burrowing owls are detected during the pre-construction survey, the owls shall be evicted from the site (when not nesting) under the supervision of a qualified biologist and following accepted California Department of Fish and Wildlife (CDFW) protocols and as approved by the CDFW to avoid direct take of burrowing owl and compensate for the loss of habitat. Compensation for the loss of occupied burrowing owl habitat shall occur at a 1:1 ratio such that the habitat acreage and number of burrows occupied by burrowing owls impacted are replaced. As recommended required by the 2012 CDFW Staff Report on Burrowing Owl Mitigation, if burrowing owl are detected on the Project site, a mitigation and management plan</p>	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<p>shall be drafted and submitted to CDFW for approval, and shall ensure <u>mitigation</u> lands used to compensate for the loss of habitat and burrows occupied by burrowing owls are conserved and managed in perpetuity.</p> <p>Mitigation Measure 4.4.2: Bats. Bat roosting/nursery exit counts and acoustic surveys shall be performed in Serrano Creek by a qualified bat biologist prior to site disturbance to determine whether Serrano Creek supports a bat nursery and/or roost and by which species. The survey results shall be submitted to the Director of the City of Lake Forest Community Development Department, or designee. This survey work shall occur in late-spring/summer and potentially again in the fall, depending on the results of the summer work. This would be determined by the bat biologist. If the results of the bat work finds 25 or more individuals composed of non-special-status bat species and/or one or more bats with a special-status, a Bat Management Plan shall be developed to ensure bat mortality does not occur during construction. If it is determined that excluding the bats during non-breeding (generally October through March) is necessary, the <u>Bat Management Plan</u> shall provide details (both in text and with graphic images) where exclusion devices shall be placed, the timing for exclusion work, and the timeline and methodology needed to exclude the bats. The <u>Bat Management Plan</u> shall be reviewed and approved by CDFW. Prior to issuance of any construction or grading permits for work adjacent to Serrano Creek, documentation indicating CDFW approval of the <u>Bat Management Plan</u> shall be provided to the City of Lake Forest Director of Community Development, or designee.</p> <p>Mitigation Measure 4.4.3: Invasive Plant Species. Prior to issuance of any building permits, the Project Applicant/Developer shall submit a final landscape plan to the Director of the City of Lake Forest Community Development Department, or designee, demonstrating that the landscaping palette for all common areas within the community does not include invasive exotic plants (i.e., those plant species rated as “high” or “moderate” in the California Invasive Plant Council’s [Cal-IPC] Invasive Plant Inventory). Prior to the first final building inspection <u>issuance of certificates of occupancy</u>, the Project Applicant/Developer shall submit a copy of the Homeowner Association’s (HOA) Covenants, Conditions, and Restrictions (CC&Rs) to the Director of the City of Lake Forest Community Development Department, or designee, for verification that the CC&Rs prohibit the use of invasive exotic plants in all on-site parks, open space, and other common areas. Further, the CC&Rs shall note that revisions to the HOA CC&Rs related to the maintenance of parks, open space, and other common areas shall be prohibited except with the review and approval of the Director of the City of Lake Forest Community Development Department, or designee.</p> <p>Mitigation Measure 4.4.4: Preservation of Serrano Creek During Project Construction. Prior to the start of grading or construction activities, the Director of the City of Lake Forest Community Development Department, or designee, shall verify that plans require the Project impact footprint, including any construction buffers, be staked and fenced (e.g., with orange snow fencing, silt fencing, or a material that is clearly visible). The Director of the City of Lake Forest Community Development Department, or designee, shall further verify that a qualified, experienced biologist has been retained by the Project Applicant/Developer and that the biologist shall: (1) be present on site during all grading or vegetation removal activities occurring within 100 ft of Serrano Creek to ensure that encroachment into Serrano Creek and/or the southern black willow forest does not occur; and (2) verify the boundary is properly delineated, staked, and fenced prior to the start of any ground disturbance or vegetation clearing. The Construction Site Manager shall ensure that the <u>staking/fencing</u> is maintained for the duration of construction and that any required repairs are completed in a timely manner. Prior to the removal of the <u>staking/fencing</u> at the completion of construction activities, a qualified, experienced biologist shall conduct a final inspection of the area to ensure that encroachment into Serrano Creek and/or the southern black willow forest has not occurred. The biologist shall provide a final report to the City of Lake Forest Director of Community Development, or designee. If encroachment did occur, the biologist shall evaluate the encroachment and provide a report to both the City of Lake Forest Director of Community Development and CDFW. The City and CDFW shall determine if and what additional mitigation would be required.</p> <p>Mitigation Measure 4.4.5: Construction Best Management Practices. Prior to the start of grading or construction activities, the Director of the City of Lake Forest Community Development Department, or designee, shall verify that the plans note the following requirements:</p> <ul style="list-style-type: none"> Any open trenches shall be covered at the end of each workday in a manner to prevent the entrapment of wildlife, or be adequately ramped to provide an animal escape route. 	

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> ● Construction shall occur between 30 minutes before sunrise and 30 minutes after sunset. ● No nighttime construction within 200 ft of Serrano Creek shall occur. ● No construction lighting shall be placed within 200 ft of Serrano Creek unless a qualified biologist confirms the lighting does not illuminate Serrano Creek. ● Active construction areas shall be watered regularly (at least once every 2 hours) to control dust and thus minimize impacts on vegetation within Serrano Creek. ● Equipment operators and construction crews shall be informed of the importance of the construction limits by the biological monitor prior to any ground disturbance. ● Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the limits of disturbance and the designated staging areas and routes of travel approved by the biological monitor. ● Exotic plant species removed during construction shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the site and before leaving the site during the course of construction. The cleaning of equipment shall occur at least 300 ft from jurisdictional aquatic features, including Serrano Creek. If the location is closer, it must be approved by the biological monitor. ● Vegetation shall be covered while being transported, and vegetation materials removed from the site shall be disposed of in accordance with applicable laws and regulations. ● All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances shall occur only in designated areas within the limits of disturbance and at least 200 ft from jurisdictional aquatic features, including Serrano Creek. These designated areas shall be clearly marked and located in such a manner as to contain runoff and shall be approved by the biological monitor. ● To avoid attracting predators, the Project site will be kept clear of trash and debris. All food-related trash items will be enclosed in sealed containers and regularly removed from the site. <p>Mitigation Measure 4.4.6: Perimeter Glass Fencing. Prior to issuance of the first building permit, the Project Applicant/Developer shall submit a Wall and Fencing Plan to the City of Lake Forest Director of Community Development, or designee, for review and approval. The Wall and Fencing Plan shall specify, and include details for, the use of a permanent bird strike avoidance treatment consisting of either window film (CollidEscape Clear or equivalent) or UV (ultraviolet) patterned glass (or equivalent) on all perimeter glass fencing, including but not limited to the fencing around Serrano Creek and the radiant heat wall (refer to Figure 4.19.2: Fire Protection Plan). The Wall and Fence Plan shall include documentation addressing the bird strike avoidance effectiveness of the proposed treatment.</p>	
<p>Threshold 4.4.2: The proposed Project would have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.</p>	<p>Potentially Significant Impact</p>	<p>Refer to Mitigation Measures 4.4.1 (Aesthetics), 4.4.4 and 4.4.5, above.</p> <p>Mitigation Measure 4.4.7: Habitat Management Plan. Prior to the issuance of the first building permit, start of grading or construction activities, the Director of the City of Lake Forest Community Development Department, or designee, shall verify that the Project Applicant/Developer has developed a Habitat Management Plan (HMP) for the Project site. The HMP shall describe the long-term management and maintenance requirements—including funding mechanisms and monitoring—for the Open Space & Habitat & Restoration Area and the southern black willow forest. In addition, the HMP shall, at a minimum:</p> <ul style="list-style-type: none"> ● Require the installation of permanent fencing along the perimeter of the Open Space & Habitat & Restoration Area and interior trails, if applicable. In addition, permanent signs shall be installed along all fencing indicating the purpose and need for the fencing and the restrictions within the Open Space & Habitat & Restoration Area. The maintenance of the fencing and signage shall be the responsibility of the HOA or a long-term land management entity. ● Require that all lighting along the perimeter of Serrano Creek, particularly street lamps, be shielded and oriented in a manner that prevents spill light or glare into the Creek. This also includes outdoor lighting for those residences abutting Serrano Creek. It shall be the responsibility of the HOA to ensure lighting is maintained consistent with these criteria. 	<p>Less than Significant Impact</p>

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> The Project Applicant/Developer shall place the Open Space & Habitat & Restoration Area into a conservation easement or similar legal protection, along with sufficient funds (as approved by the City of Lake Forest Director of Community Development, or designee) to protect the lands in perpetuity. In addition, lands within the conservation easement shall be managed in perpetuity by a qualified entity designated by the Project Applicant/Developer and approved by the City of Lake Forest Director of Community Development, or designee. 	
<p>Threshold 4.4.3: The proposed Project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.</p>	<p>Potentially Significant Impact</p>	<p>Mitigation Measure 4.4.8: Jurisdictional Resources. Prior to the issuance of any grading permits, the Project Applicant/Developer shall coordinate with the United States Army Corps of Engineers (ACOE), Santa Ana Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW) regarding their jurisdiction over the on-site drainages. <u>The results of the Project Applicant/Developer's coordination efforts with the ACOE, RWQCB, and CDFW regarding their jurisdiction over the on-site drainages, and any mitigation measures required by the resource agencies regarding impacts on their respective jurisdictions shall be documented in a memorandum submitted to the City of Lake Forest Director of Community Development, or designee, prior to issuance of grading permits.</u></p> <p>The Project Applicant/Developer shall be obligated to implement/comply with mitigation measures required by the resource agencies regarding impacts on their respective jurisdictions. The ratios at which ACOE, RWQCB, and CDFW may require permanent impacts to be mitigated vary from 1:1 (no net loss) to as high as 3:1. The jurisdictional areas of the ACOE, RWQCB, and CDFW are not additive areas because the jurisdictional areas on the site may be within the jurisdiction of one or more of these agencies. Therefore, the permits and associated jurisdictional replacement requirements would identify which mitigation areas apply to the corresponding jurisdiction. At a minimum, the following shall be implemented by the Project Applicant/Developer prior to issuance of building permits:</p> <ul style="list-style-type: none"> A detailed Habitat Mitigation Monitoring Plan (HMMP) shall be prepared that describes the location of establishment, restoration, and/or enhancement, which shall include replanting requirements, success criteria, and monitoring following construction. The HMMP shall be incorporated into the regulatory agencies permit, certification, and agreement required for the proposed Project and shall be subject to review and approval by the resource agencies. To mitigate the loss of ACOE, RWQCB, and CDFW jurisdictional waters, the Project Applicant/Developer shall create a minimum of 4.19 acres (ac) of riparian vegetation on the Project site that shall be contiguous with, and contribute to, the existing riparian canopy associated with Serrano Creek within the conservation lands. If on-site mitigation options are not feasible, the Project Applicant/Developer shall purchase credits from an approved mitigation bank/in-lieu fee program at a minimum of a 1:1 ratio, for a minimum of 1.91 ac of mitigation credits. If on-site mitigation options are not feasible and an approved mitigation bank/in-lieu fee program cannot be identified to mitigate the loss of ACOE, RWQCB, and CDFW jurisdiction, the Project Applicant/Developer shall enhance, re-establish, or establish ACOE, RWQCB, and CDFW jurisdictional areas on off-site conserved lands at a minimum 1:1 ratio, for a minimum of 1.91 ac of enhancement, re-establishment, or establishment. <p>Mitigation Measure 4.4.9: Aquatic Resource Integrity Area. The Project site is located within the boundaries of the San Diego Creek Watershed Special Area Management Plan (SAMP). The proposed Project would result in impacts to 0.95 ac of mapped Aquatic Resource Integrity Area. Mitigation for impacts to greater than 0.1 ac within this mapping unit shall be developed in coordination with the ACOE/CDFW unless the ACOE/CDFW determines that the Project site does not contain an Aquatic Resource Integrity Area (i.e., there is a mapping error in the SAMP). Prior to the issuance of any grading permits, the Project Applicant/Developer shall provide documentation to the City of Lake Forest Director of Community Development, or designee, that (1) ACOE/CDFW has determined that a mapping error exists (which may be accomplished through issuance of a <u>Letter of Permission</u>); OR (2) the Project Applicant/Developer shall implement mitigation as specified by the ACOE/CDFW.</p>	<p>Less than Significant Impact</p>
<p>Threshold 4.4.4: The proposed Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.</p>	<p>Less than Significant Impact</p>	<p>RCM BIO-1: Migratory Bird Treaty Act and California Department of Fish and Game Code. In the event that any construction, vegetation clearing, or grading activities (including disking and demolition) should occur between February 1st and September 1st, a qualified biologist shall conduct a nesting bird survey within no more than 3 days of prior to commencement of construction activities to confirm the absence of nesting birds. If active nesting of birds is observed within 500 feet (ft) of the designated construction area during surveys, the biologist shall establish suitable buffers around the active nests (e.g., a minimum of 50 ft for passerines and 250 ft for raptors [including burrowing owls]). The buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests. Prior to commencement of grading activities and issuance of any building permits, the Director of the City of Lake Forest Community Development, or designee, shall verify that all Project grading and construction plans include specific documentation regarding the</p>	<p>Less than Significant Impact</p>

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		requirements of the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503, that preconstruction surveys have been completed and the results reviewed by staff, and that the appropriate buffers (if needed) are noted on the plans and established in the field with orange snow fencing.	
Threshold 4.4.5: The proposed Project would conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Potentially Significant Impact	<p>RCM BIO-2: Tree Ordinance. In compliance with City of Lake Forest Municipal Code Section 6.20.025, if any eucalyptus trees on the Project site are to be cut or trimmed between April 1st through October 31st, the Project Applicant/Developer shall first obtain a permit from the City of Lake Forest for the transportation of any logs, branches, or trunks to an off-site location for disposal.</p> <p>Mitigation Measure 4.4.10: Invasive Short Hole Borers (ISHBs). A designated biologist familiar with the signs of ISHBs shall survey trees on the Project site that are designated for removal or trimming. Surveys shall be conducted at least no more than 30 days prior to removal or trimming activities. If any tree is determined to be infested/infected by ISHBs, a control plan shall be prepared and submitted to CDFW for review and approval. At a minimum, the control plan shall include methods of control, removal, and appropriate disposal techniques to prevent the spread of ISHBs. The results of the tree survey, and if warranted, a copy of the CDFW-approved control plan shall be submitted to the City of Lake Forest Director of Community Development, or designee, prior to issuance of construction grading permits.</p>	Less than Significant Impact
Threshold 4.4.6: 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.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impacts to Biological Resources: During construction, the proposed Project would contribute to cumulatively considerable declines of native streambed vegetation and bats.	Potentially Significant Impact	Refer to Mitigation Measures 4.4.1, 4.4.2, 4.4.4, and 4.4.5.	Less than Significant Impact
4.5: Cultural Resources			
Threshold 4.5.1: The proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.	No Impact	No mitigation is required.	No Impact
Threshold 4.5.2: The proposed Project would potentially cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	Potentially Significant Impact	<p>Mitigation Measure 4.5.1 Archaeological Resources, Tribal Cultural Resources, and Human Remains. Prior to issuance of a grading permit for any site within the Project Area, a qualified archaeologist shall be retained by the Applicant for that grading permit to provide professional archaeological services. The archaeologist shall be present at the pre-grading conference to establish procedures for archaeological resource surveillance. Those procedures shall include provisions for temporarily halting or redirecting work to permit sampling, identification, and evaluation of resources deemed by the archaeologist to potentially be historical resources or unique archaeological resources under CEQA. The archaeologist also shall conduct on-site archaeological monitoring for the grading operation. Should historical resources or unique archaeological resources be discovered during the grading operation, grading activities shall be modified to allow expeditious and proper analysis and/or salvage of the resources. Disposition of the resources shall be within the discretion of the City of Lake Forest.</p> <p>Prior to Approval of Grading or Improvement plans, the Applicant shall implement a grading monitoring plan to mitigate potential impacts to undiscovered buried archaeological resources on the Portola Center Project to the satisfaction of the City of Lake Forest. This program shall include, but shall not be limited to, the following actions:</p> <ol style="list-style-type: none"> 1. Provide evidence to the lead agency that a qualified archaeologist and Native American monitor have been contracted to implement a grading monitoring program to the satisfaction of the City of Lake Forest. A letter from the Project Archaeologist shall be submitted to the City of Lake Forest Director of Development Services. A letter from the Native American Monitor shall also be submitted to the City of Lake Forest Director of Community Development. The letter shall include the following guidelines: <ol style="list-style-type: none"> a. The qualified archaeologist/historian and Native American Monitor shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program. b. The consulting archaeologist and Native American monitor shall monitor all areas identified for development <u>as determined by the Principal Investigator of the excavations.</u> c. An adequate number of monitors (archaeological/ historical/Native American) shall be present to ensure that all earth- 	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<p>moving activities are observed and shall be on site during all grading activities <u>as determined by the Principal Investigator of the excavations.</u></p> <p>d. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site full-time. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator.</p> <p>e. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site as determined by the Principal Investigator of the excavations. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator in consultation with the Native American monitor.</p> <p>f. Isolates and clearly non-significant deposits shall be minimally documented in the field and the monitored grading can proceed.</p> <p>g. In the event that previously unidentified, potentially significant cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation. The archaeologist shall contact the City of Lake Forest Director of Development Services at the time of discovery. Disposition of the resources shall be within the discretion of the City of Lake Forest. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist, then carried out using professional archaeological methods.</p> <p>h. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.</p> <p>i. Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods. The Principal Investigator shall determine the amount of material to be recovered for an adequate artifact sample for analysis.</p> <p>j. In the event that previously unidentified cultural resources are discovered, all cultural material collected during the grading monitoring program shall be processed and curated at a facility that meets federal standards per 36 CFR Part 79, and therefore shall be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to the John D. Cooper Archaeological and Paleontological Curation Center, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.</p> <p>k. In the event that previously unidentified cultural resources are discovered, a report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the City of Lake Forest prior to the issuance of any building permits. The report shall include Department of Parks and Recreation Primary and Archaeological Site Forms.</p> <p>l. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the City of Lake Forest by the consulting archaeologist that the grading monitoring activities have been completed.</p> <p>2. Provide evidence to the Lead Agency that the following notes have been placed on the Grading Plan:</p> <p>a. The qualified archaeologist/historian and Native American monitor shall attend the pre-construction meeting with the contractors to explain and coordinate the requirements of the monitoring program.</p> <p>b. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site to perform full-time monitoring as determined by the Principal Investigator of the</p>	

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<p>excavations. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.</p> <p>c. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site as determined by the Principal Investigator of the excavations. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator in consultation with the Native American monitor.</p> <p>d. In the event that previously unidentified, potentially significant cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation. The archaeologist shall contact the City of Lake Forest Director of Development Services at the time of discovery. Disposition of the resources shall be within the discretion of the City of Lake Forest. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist, then carried out using professional archaeological methods.</p> <p>e. The consulting archaeologist shall monitor all areas identified for development <u>as determined by the Principal Investigator of the excavations.</u></p> <p>f. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.</p> <p>g. Prior to rough grading inspection sign-off, provide evidence that the field grading monitoring activities have been completed to the satisfaction of the City of Lake Forest. Evidence shall be in the form of a letter from the Project Archaeologist.</p> <p>h. Prior to final grading release, submit to the satisfaction of the City of Lake Forest, a final report that documents the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program. The report shall also include the following:</p> <ul style="list-style-type: none"> • Department of Parks and Recreation Primary and Archaeological Site Forms. • Evidence that all cultural materials collected during the grading monitoring program has been curated, and therefore shall be professionally curated and made available to other archaeologists/ researchers for further study. The collections and associated records shall be transferred, including title, to the John D. Cooper Archaeological and Paleontological Curation Center, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid. <p>3. In the event that no cultural resources area discovered, a brief letter to that effect shall be sent to the City of Lake Forest by the consulting archaeologist that the grading monitoring activities have been completed.</p> <p>4. The qualified archaeologist retained shall prepare monthly progress reports <u>during monitoring</u> to be filed with the site developer(s) and the City of Lake Forest.</p> <p>5. Artifacts recovered shall be prepared, identified, and cataloged before donation to the Gabrieleno Band of Mission Indians – Kizh Nation. If the Tribe does not want custody, an accredited repository designated by the City of Lake Forest shall be utilized. Any artifacts determined to be insignificant shall be offered to local schools for use in educational programs.</p> <p>6. The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The report shall include a list of specimens recovered, documentation of each locality, interpretation of artifacts recovered and shall include all specialists’ reports as appendices.</p>	

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
Threshold 4.5.3: The proposed Project would potentially disturb human remains, including those interred outside of formal cemeteries.	Potentially Significant Impact	Refer to Mitigation Measure 4.5.1 above.	Less than Significant Impact
Cumulative Impacts to Cultural Resources: Potential impacts of the proposed Project to unknown cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the overall loss of historical and archaeological artifacts unique to the region.	Potentially Significant Impact	Refer to Mitigation Measure 4.5.1 above.	Less than Significant Impact
4.6: Energy			
Threshold 4.6.1: The proposed Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Less than Significant Impact	<p>RCM EN-1: California Code of Regulations, Title 13, General Requirements for In-Use Off-Road Diesel-Fueled Fleets. The construction contractor shall ensure that all non-essential idling of construction equipment is restricted to 5 minutes or less in compliance with California Code of Regulations (CCR) Title 13, Chapter 9, Article 4.8, Section 2449. Prior to issuance of any grading or building permits, the City of Lake Forest Director of Community Development, or designee, shall confirm that plans include notes with this requirement.</p> <p>RCM EN-2: California Code of Regulations, Title 13, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools. During operation, all school bus drivers shall comply with CCR Title 13, Article 1, Chapter 10, Section 2480 to limit bus idling at schools. School bus shall be turned off upon stopping at the school or within 100 feet of the school. School buses shall not be turned on more than 30 seconds before beginning to depart from the school or from within 100 feet of the school. School bus within 100 feet of the school shall not idle for more than 5 consecutive minutes and shall not idle for more than a cumulative 5 minutes in any 1 hour.</p> <p>In addition, refer to RCM AQ-4 and RCM GHG-1</p>	Less than Significant Impact
Threshold 4.6.2: The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impacts related to Energy: There are sufficient planned energy supplies to serve the proposed Project and related projects. The proposed Project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.7: Geology and Soils			
Threshold 4.7.1(ii): The proposed Project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	Potentially Significant Impact	<p>RCM GEO-1: California Building Code Compliance Seismic Standards. Structures and retaining walls shall be designed in accordance with the seismic parameters presented in the Geotechnical Evaluation (NMG Geotechnical 2017) and applicable sections of Section 1613 of the most current California Building Code (CBC). Prior to issuance of building permits for planned structures, the Project soils engineer and the Director of the City of Lake Forest Community Development Department, or designee, shall review building plans to verify that the structural design conforms to the requirements of the geotechnical study and the City of Lake Forest Municipal Code.</p> <p>Mitigation Measure 4.7.1: Incorporation of and compliance with the recommendations in the Project Geotechnical Assessment. All grading operations and construction shall be conducted in conformance with the recommendations included in the geotechnical evaluation on the Project site that has been prepared by NMG Geotechnical, Inc., titled Geotechnical Evaluation of Proposed Residential and School Site Development, Nakase Property, Lake Forest, California (April 19, 2017). Specific recommendations in the geotechnical evaluation address the following and shall be incorporated into the final Project plans and construction-level geotechnical report:</p> <ol style="list-style-type: none"> 1. Removal of undocumented fill on the northern half of the Project site during remedial grading. 2. Removal of any soft or poor quality fill during remedial grading. If some of this material cannot be removed in order to prevent undermining the existing road, then a structural setback would be required to protect the planned structures from excessive differential settlement induced by the new fill loading. 3. Compact fill placement to reduce the potential for surface manifestations of liquefaction during seismic shaking. 4. Installation of a seismic shear key in the vicinity of Serrano Creek to mitigate the potential of lateral slope failure due to the 	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<p>effects of liquefaction potential in the alluvium during a significant seismic shaking event.</p> <p>5. Evaluation of the stability of the slopes If existing slopes are to essentially remain in place to ensure they have been graded to a standard that resulted in a 1.5 safety factor for gross and surficial stability. If there are any deficiencies with the existing slope, they would have to be regraded to project standards or a structural setback established to protect the planned structures.</p> <p>6. Over-excavation to mitigate differential settlement in the design cut-and-fill transition areas.</p> <p>7. Scour protection related to periodic surface flow in Serrano Creek.</p> <p>Additional site testing and final design evaluation shall be conducted by the Project Geotechnical Consultant to refine and enhance these requirements. The Project Applicant/Developer shall require the Project Geotechnical Consultant to assess whether the requirements in that report need to be modified or refined to address any changes in the Project features that occur prior to the start of grading. If the Project Geotechnical Consultant identifies modifications or refinements to the requirements, the Project Applicant/Developer shall require appropriate changes to the final Project design and specifications. Design, grading, and construction shall be performed in accordance with the requirements of the City of Lake Forest (City) Municipal Code (Title 8) and the California Building Code (CBC) applicable at the time of grading, appropriate local grading regulations, and the requirements of the Project Geotechnical Consultant as summarized in a final written report, subject to review by the Director of the City of Lake Forest Community Development Department, or designee, prior to commencement of grading activities.</p> <p>Grading plan review shall also be conducted by the Director of the City of Lake Forest Community Development Department or designee prior to the start of grading to verify that the requirements developed during the geotechnical design evaluation have been appropriately incorporated into the project plans. Design, grading, and construction shall be conducted in accordance with the specifications of the Project Geotechnical Consultant as summarized in a final report based on the CBC applicable at the time of grading and building, and the City's Building Code. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and the City of Lake Forest Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into project plans. Prior to final of grading permits, the Project geotechnical engineer shall submit a Final Testing and Observation Geotechnical Report for Rough Grading to the City of Lake Forest Director of Public Works/City Engineer, or designee.</p>	
<p>Threshold 4.7.1(iii): The proposed Project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.</p>	<p>Potentially Significant Impact</p>	<p>Refer to Mitigation Measure 4.7.1 and RCM GEO-1 above.</p>	<p>Less than Significant Impact</p>
<p>Threshold 4.7.2: The proposed Project would not result in substantial soil erosion or the loss of topsoil.</p>	<p>Less than Significant Impact</p>	<p>Refer to Regulatory Compliance Measures RCM WQ-1, RCM WQ-2, and RCM WQ-3 (Hydrology and Water Quality)</p>	<p>Less than Significant Impact</p>
<p>Threshold 4.7.3: The proposed Project would 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.</p>	<p>Potentially Significant Impact</p>	<p>Refer to Mitigation Measure 4.7.1, RCM GEO-1 above.</p> <p>Mitigation Measure 4.7.2: Corrosive Soils. Prior to issuance of the first building permit, the Director of the City of Lake Forest Public Works Department, or designee, shall verify that the Project Applicant/Developer has retained the services of a licensed corrosion engineer to provide detailed corrosion protection measures. Where steel may come in contact with on-site soils, project construction shall include the use of steel that is protected against corrosion. Corrosion protection may include, but is not limited to, sacrificial metal, the use of protective coatings, and/or cathodic protection. Additional site testing and final design evaluation regarding the possible on-site presence of significant volumes of corrosive soils shall be performed by the Project Geotechnical Consultant to refine and enhance these recommendations. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and City of Lake Forest Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into Project plans.</p>	<p>Less than Significant Impact</p>
<p>Threshold 4.7.4: The proposed Project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.</p>	<p>Less than Significant Impact</p>	<p>No mitigation is required.</p>	<p>Less than Significant Impact</p>

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
Threshold 4.7.6: The proposed Project would potentially directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially Significant Impact	<p>Mitigation Measure 4.7.3: Paleontological Resources Impact Mitigation Program. Prior to the issuance of the first preliminary or precise grading permit, the Project Applicant/Developer shall provide a letter to the Director of the City of Lake Forest Community Development Department, or designee, retained a qualified paleontologist (defined as a practicing paleontologist that is recognized in the paleontological community and proficient in vertebrate paleontology) who is listed on the County of Orange list of certified paleontologists. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for this Project. The PRIMP shall include the methods that will be used to protect paleontological resources that may exist within the Project site, as well as procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology.</p> <p>Excavation and grading activities in deposits with high paleontological sensitivity shall be monitored by a paleontological monitor following a PRIMP. No monitoring is required for excavations in deposits with no or low paleontological sensitivity.</p> <p>If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find in order to assess its significance. In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected and a paleontologist shall be contacted to assess the find for significance.</p> <p>Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a scientific institution.</p> <p>Prior to issuance of the first building permit approval of any occupancy permits, a report of findings shall be prepared to document the results of the monitoring program.</p>	Less than Significant Impact
Cumulative Impacts to Geology and Soils: Potential impacts of the proposed Project to unknown paleontological resources and unique geologic features, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the overall loss of paleontological remains unique to the region. However, when resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant.	Potentially Significant Impact	Refer to Mitigation Measure 4.7.3 above.	Less than Significant Impact
4.8: Greenhouse Gas Emissions			
Threshold 4.8.1: The proposed Project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Potentially Significant Impact	<p>No feasible mitigation measures are available</p> <p>RCM GHG-1: Title 20 of the California Code of Regulations (CCR). Appliances installed in a project building will comply with the energy efficiency requirements in CCR Title 20, Appliance Energy Efficiency Standards. All appliances shall be Energy Star appliances.</p> <p>In addition, refer to RCM-AQ-3 and RCM-AQ-4</p>	Significant and Unavoidable Impact
Threshold 4.8.2: The proposed Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Potentially Significant Impact	No feasible mitigation measures are available	Significant and Unavoidable Impact
Cumulative Impact related to Greenhouse Gas Emissions: Because the Project's GHG emissions are considered significant and unavoidable, the Project's GHG emissions and contribution to global climate change impacts are considered cumulatively considerable and therefore significant and unavoidable.	Potentially Significant Impact	No feasible mitigation measures are available	Significant and Unavoidable Impact
4.9: Hazards and Hazardous Materials			
Threshold 4.9.1: The proposed Project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially Significant Impact	<p>Mitigation Measure 4.9.1: Demolition Plan. Prior to or concurrent with demolition permit applications, the Construction Contractor shall provide a Demolition Plan to the City of Lake Forest Director of Community Development or designee for review and approval. The Demolition Plan shall include the procedures for pre-demolition surveys and testing for hazardous building materials such as asbestos, lead-based paint, mercury, and polychlorinated biphenyls, and removal and disposal of hazardous building materials. All inspections, surveys, and analyses shall be performed by appropriately licensed and qualified</p>	Less than Significant Impact

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Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<p>individuals in accordance with applicable regulations. All identified hazardous materials shall be removed, handled, and properly disposed of by appropriately licensed contractors according to all applicable regulations during demolition of structures. The Construction Contractor shall provide documentation (e.g., all required waste manifests, sampling, and air monitoring analytical results) to the City of Lake Forest Director of Community Development or designee showing that abatement of hazardous building materials has been completed in full compliance with all applicable regulations. The City of Lake Forest Director of Community Development or designee shall document that the Demolition Plan has been approved prior to issuance of demolition permits and that the requirements of the Demolition Plan have been implemented prior to issuance of grading permits.</p> <p>Mitigation Measure 4.9.2: Construction Contingency Plan. Prior to or concurrent with grading permit applications, the Construction Contractor shall provide a Construction Contingency Plan to the City of Lake Forest Director of Development Services or designee for review and approval. The Construction Contingency Plan shall include provisions for emergency response in the event that unidentified hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes are discovered during construction activities. The Construction Contingency Plan shall address field screening, contaminant materials testing methods, mitigation and contaminant management requirements, and health and safety requirements for construction workers. The construction contractor shall implement the Construction Contingency Plan during all construction activities. During construction, the construction contractor shall cease work immediately if an unexpected release of hazardous substances is found in reportable quantities. If an unexpected release of hazardous substances is found in reportable quantities, the construction contractor shall notify the National Response Center by calling 1-800-424-8802. The Construction Contractor shall clean up any unexpected releases under appropriate federal, State, and local agency oversight. The City of Lake Forest Director of Community Development or designee shall document that the Construction Contingency Plan has been approved and that the requirements of the Construction Contingency Plan have been implemented prior to <u>the first final building inspection/issuance of certificate of occupancy.</u></p>	
Threshold 4.9.2: The proposed Project would 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	Refer to Mitigation Measures 4.9.1 and 4.9.2 above.	Less than Significant Impact
Threshold 4.9.3: The proposed Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	Potentially Significant Impact	<p>Refer to Mitigation Measures 4.9.1 and 4.9.2 above.</p> <p>Mitigation Measure 4.9.3: DTSC Oversight of School Site. Prior to commencement of precise <u>submittal of grading permits</u> for the elementary school portion of the Project site, the Saddleback Valley Unified School District Project Applicant shall provide documentation to the California Division of the State Architect <u>City of Lake Forest Director of Community Development or designee</u> that the Department of Toxic Substances Control (DTSC) has issued a "No Further Action" letter for the school site. The steps that may be required in order to gain a "No Further Action" letter from DTSC could include: DTSC review of all Phase I and Phase II ESAs for the project site; soil and/or groundwater testing, health risk analysis, Preliminary Endangerment Assessment preparation and approval, site remediation/cleanup, and public review of prepared reports.</p>	Less than Significant Impact
Threshold 4.9.4: The proposed Project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, it would create a significant hazard to the public or the environment.	No Impact	No mitigation is required.	No Impact
Threshold 4.9.6: The proposed Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Potentially Significant Impact	Refer to Mitigation Measure 4.16.1 (Transportation and Traffic), below.	Less than Significant Impact
Cumulative Impacts related to Hazards and Hazardous Materials: The proposed Project would not result in a significant contribution to cumulative hazards or hazardous materials impacts.	Potentially Significant Impact	Refer to Mitigation Measures 4.9.1, 4.9.2, and 4.9.3 above.	Less than Significant Impact

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Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
4.10: Hydrology and Water Quality			
<p>Threshold 4.10.1: The proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.</p>	<p>Less than Significant Impact</p>	<p>RCM WQ-1: Construction General Permit. Prior to commencement of construction activities, the Applicant shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Stormwater Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the project from the SMARTS and provided to the Director of the City of Lake Forest Public Works Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including but not limited to, preparation of a SWPPP and implementation of construction site Best Management Practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in stormwater runoff. Construction Site BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of construction activities and stabilization of the Project site, a Notice of Termination shall be submitted via SMARTS.</p> <p>RCM WQ-2: Erosion and Sediment Control Plans. In compliance with the requirements of Title 8 Buildings and Construction, Chapter 8.30, Grading and Excavation, Article XIII, Erosion Control of the City of Lake Forest Municipal Code, the Applicant shall submit a grading plan and erosion control plan to the Director of the City of Lake Forest Public Works Department, or designee, for review and approval prior to issuance of a grading permit. The Applicant shall also submit erosion and sediment control plans annually to the Director of the City of Lake Forest Public Works Department, or designee, for review and approval by September 15th of each year during construction.</p> <p>RCM WQ-3: Water Quality Management Plan. Prior to issuance of building permits, the Applicant shall submit a Final Water Quality Management Plan (WQMP) to the Director of the City of Lake Forest Public Works Department, or designee, for review and approval in compliance with the Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County (North Orange County MS4 Permit), Order No. R8-2009-0030, NPDES No. CAS618030 (as amended by Order No. R8-2010-0062). The Final WQMP shall be prepared consistent with the requirements of the Model Water Quality Management Plan (WQMP) (County of Orange 2011), Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs) (County of Orange 2013), the City of Lake Forest Local Implementation Plan (LIP) (2010), and Managing Wet Weather with Green Infrastructure Municipal Handbook Green Streets (EPA 2008), or subsequent guidance manuals. The Final WQMP shall specify the BMPs to be incorporated into the project design to target pollutants of concern in runoff from the project site. The Final WQMP shall also incorporate the results of the Final Hydrology Analysis to demonstrate that the detention facilities meet the hydromodification requirements of the North Orange County MS4 Permit. The Director of the City of Lake Forest Public Works Department, or designee, shall ensure that the BMPs specified in the Final WQMP are incorporated into the final project design.</p> <p>RCM WQ-5: Groundwater Dewatering Permits. If groundwater dewatering is required during excavation activities, the Applicant shall obtain coverage under one of two orders, or any subsequent orders, that apply to groundwater discharges to surface waters within the Newport Bay/San Diego Creek Watershed depending on the nature of the groundwater. The General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality (Order No. R8-2009-0003, NPDES No. CAG998001) covers discharges to surface waters that pose an insignificant (de minimus) threat to water quality within. This Order would be applicable to the project if it can be demonstrated that the groundwater being discharged to surface waters does not contain pollutants of concern (selenium and nitrates) in the discharge. However, if groundwater is found to contain petroleum hydrocarbons, solvents, metals and/or salts,</p>	<p>Less than Significant Impact</p>

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Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		the project would be subject to the General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites Within the San Diego Creek/Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts (Order No. R8-2007-0041, NPDES No. CAG918002, as amended by R8 2009-0045 R8-2007-0041), which covers general discharge permits for discharges to surface waters of groundwater resulting from groundwater dewatering operations and/or groundwater cleanup activities at sites within the San Diego Creek/Newport Bay Watershed that have been polluted by petroleum hydrocarbons, solvents, metals and/or salts, or nutrients, selenium, and other pollutants of TMDL concern. This shall include submission of a Notice of Intent (NOI) for coverage under the permit to the Santa Ana Regional Water Quality Control Board (RWQCB) at least 45 days prior to the start of dewatering. Groundwater dewatering activities shall comply with all applicable provisions in the permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.	
Threshold 4.10.2: The proposed Project would not 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 is required.	Less than Significant Impact
Threshold 4.10.3(i): The proposed Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site.	Less than Significant Impact	RCM WQ-4: Final Hydrology and Hydraulic Analyses. Prior to issuance of building permits, the Applicant shall submit a Final Hydrology and Hydraulic Analyses to the Director of the City of Lake Forest Public Works Department, or designee, and the Orange County Flood Control District (OCFCD) for review and approval. The Final Hydrology and Hydraulic Analyses shall be prepared consistent with the requirements of the Orange County Hydrology Manual (Orange County Environment Agency 1986) and Orange County Hydrology Manual Addendum No. 1 (Orange County Environment Agency 1996), or subsequent guidance manuals. The Final Hydrology and Hydraulic Analyses shall confirm that the on-site storm drains, on-site detention basins, and any other drainage structures are appropriately sized to accommodate stormwater runoff from the design storm so that the peak flow of stormwater discharge from the Project site is less than existing conditions. The Final Hydrology and Hydraulic Analyses shall also demonstrate that the detention facilities meet the hydromodification requirements of the Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County (North Orange County MS4 Permit), Order R8-2009-0030, NPDES No. CAS618030 (as amended by Order No. R8-2010-0062). In compliance with the hydromodification requirements, the post-project runoff discharge volume for the 2-year storm shall not exceed that of the predevelopment condition by more than 5 percent, and the time of concentration of post-development runoff for the 2-year storm event shall not be greater than 5 percent less than that of the predevelopment condition. The Director of the City of Lake Forest Public Works Department, or designee, shall ensure that the drainage facilities specified in the Final Hydrology and Hydraulic Analyses are incorporated into the final project design. In addition, refer to RCM WQ-1, RCM WQ-2, and RCM WQ-3	Less than Significant Impact
Threshold 4.10.3(II): The proposed Project would not 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.	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Threshold 4.10.3(III): The proposed Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
Threshold 4.10.3(iv): The proposed Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.10.4: The proposed Project would not be in a flood hazard, tsunami, or seiche zone with the risk of release of pollutants due to project inundation.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.10.5: The proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Threshold 4.10.6: The proposed Project would not deposit sediment and debris materials within existing channels obstructing flows.	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Threshold 4.10.7: The proposed Project would not exceed the capacity of a channel and cause overflow during design storm conditions.	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Threshold 4.10.8: The proposed Project would not adversely change the rate, direction or flow of groundwater.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.10.9: The proposed Project would not cause a significant alteration of receiving water quality during or following construction.	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Threshold 4.10.10: The proposed Project would not substantially degrade water quality by discharge which affects the beneficial uses (i.e., swimming, fishing, etc.) of the receiving or downstream waters	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Threshold 4.10.11: The proposed Project would not result in an increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list	Less than Significant Impact	Refer to RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5	Less than Significant Impact
Cumulative Impact related to Hydrology and Water Quality: The proposed Project and other related Projects would comply with applicable NPDES and City requirements, therefore, cumulative hydrology and water quality impacts would be less than significant. Therefore, the proposed Project's incremental hydrology and water quality impacts would not be cumulatively considerable.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.11: Land Use & Planning			
Threshold 4.11.2: The proposed Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.11.3: The proposed Project would not substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (i.e. noise, aesthetics, etc.) that preclude use of the land as it was intended by the General Plan.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.11.4: The proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.11.5: The proposed Project would not conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
Cumulative Impacts to Land Use & Planning: The proposed Project's contribution to cumulative impacts associated with land use and planning would be less than significant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.12: Noise			
Threshold 4.12.1: The proposed Project would result in the 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?	Potentially Significant Impact	RCM NOI-1: Ventilation Requirements. Prior to the issuance of building permits, documentation shall be provided to the City of Lake Forest Director of Community Development, or designee, demonstrating that Project buildings meet ventilation standards required by the CBC with the windows closed. It is likely that a form of mechanical ventilation, such as an air-conditioning system, will be required as part of the Project design for all on-site buildings/units. Mitigation Measure 4.12.1: Final Acoustical Study. Prior to issuance of the first building permits, the Project Applicant/Developer shall submit a final acoustical study, prepared by a qualified acoustical consultant, to the City of Lake Forest. The Director of Community Development of the City of Lake Forest, or designee, shall verify that the final acoustical study demonstrates that all residential units will comply with the City's interior noise standard (45 dBA CNEL). Noise reduction techniques will be incorporated into construction plans in order to reduce interior noise levels. These techniques include, but are not limited to, weather-stripped solid core exterior doors, dual glazed windows with a minimum sound transmission class rating of 27, and/or exterior wall/roof assemblies free of cut-outs or openings.	Less than Significant Impact
Threshold 4.12.2: The proposed Project would not result in the generation of excessive groundborne vibration or groundborne noise levels.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.12.3: The proposed Project would not be located within the vicinity of a private airstrip, public airport, or an airport land use plan and would not expose people residing or working in the Project area to excessive noise levels.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impacts to Noise and Vibration: The proposed Project's contribution to cumulative impacts associated with noise and vibration would be less than significant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.13: Population and Housing			
Threshold 4.13.1: The proposed Project would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impacts to Population and Housing: The proposed Project's contribution to cumulative impacts associated with population, housing, and employment growth would be less than significant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.14: Public Services			
Threshold 4.14.1(i): The proposed Project would result in substantial adverse physical impacts associated with the provision 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.	Potentially Significant Impact	Refer to Mitigation Measure 4.16.1 (Transportation and Traffic) Mitigation Measure 4.14.1 Secured Fire Protection Agreement. The Project Applicant/Developer shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority (OCFA). The Secured Fire Protection Agreement shall specify the developer's pro-rata fair-share funding of capital improvements necessary to establish adequate fire protection facilities and equipment, and/or personnel. Evidence of an OCFA-approved agreement shall be submitted to City of Lake Forest Director of Community Development, or designee, prior to issuance of the first building permits. RCM PS-1 City of Lake Forest Municipal Code Section 8.24.010 (California Fire Code Adoption) and Section 7.08.145 (Fire Protection). Prior to issuance of grading permits for planned structures, the City of Lake Forest Public Works Director, or designee, shall review the building plans to verify that the design conforms to the requirements of the Fire Code as adopted in the City Municipal Code.	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
Threshold 4.14.1(ii): The proposed Project would result in substantial adverse physical impacts associated with the provision 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.	Potentially Significant Impact	Refer to Mitigation Measure 4.16.1 (Transportation and Traffic)	Less than Significant Impact
Threshold 4.14.1(iii): The proposed Project would not result in substantial adverse physical impacts associated with the provision 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 schools.	Less than Significant Impact	Refer to RCM PS-1 above.	Less than Significant Impact
Threshold 4.14.1(iv): The proposed Project would not result in substantial adverse physical impacts associated with the provision 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 parks.	Less than Significant Impact	Refer to RCM REC-1 (Recreation)	Less than Significant Impact
Threshold 4.14.1(v): The proposed Project would not result in substantial adverse physical impacts associated with the provision 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 other public facilities.	Less than Significant Impact	RCM PS-2: Payment of School Facility Fees. Prior to issuance of a building permit, the Project Applicant/Developer shall submit proof of payment of all applicable school facility fees in accordance with Government Code Section 65995 to the Director of the City of Lake Forest Department of Community Development, or designee. This requirement may be satisfied through the dedication of land on the Project site to the Saddleback Valley Unified School District for future construction of a school.	Less than Significant Impact
Cumulative Impacts to Public Services: The proposed Project's potential impacts to fire services, police protection, school services, public libraries, and public transportation are not cumulatively considerable.	Less than Significant Impact	Refer to RCM PS-2 above.	Less than Significant Impact
4.15: Recreation			
Threshold 4.15.1: The Proposed project 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.	Potentially Significant Impact	<p>RCM REC-1: Dedication of Parkland. The Project Applicant/Developer shall comply with the applicable provisions of Chapter 7.38, Dedication of Land for Park Facilities and Payment of In Lieu Fees, of the City's Municipal Code, which requires applicable subdividers to dedicate to the City an amount of land equivalent to 5 ac per 1,000 estimated population for use as park facilities, or pay in-lieu fees instead of or in combination with the dedication of land, so long as the fees are equal to the value of parkland that would otherwise be dedicated.</p> <p>Mitigation Measure 4.15.1 Park and Open Space Access and Maintenance. Prior to the first final building inspection issuance of any certificate of occupancy, the Project Applicant/Developer shall submit documentation to the Director of the City of Lake Forest Community Development Department, or designee, demonstrating the following:</p> <ul style="list-style-type: none"> • The HOA shall provide for the ongoing maintenance and care of all on-site park and open space facilities. • With the exception of the on-site private recreation center, all on-site parks shall also be private, but open and accessible to the public. Appropriate signage shall be posted in all on-site parks. • The HOA shall maintain maintenance records for a period not less than 2 years and shall make the records available to the City upon request. • Long-term funding for maintenance and care of on-site recreation, park, and open space facilities shall be funded through fees paid into the HOA. The Project Applicant/Developer, which will set up the HOA, shall oversee that adequate funding for park and open space maintenance is included within the HOA fee structure, including annual maintenance fees and 	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		long-term maintenance reserve funds. <ul style="list-style-type: none"> Revisions to the HOA’s Covenants, Conditions, and Restrictions (CC&Rs) related to park and open space maintenance shall be prohibited except with the review and approval of the Director of the City of Lake Forest Community Development Department, or designee. 	
Threshold 4.14.2: The proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Cumulative Impacts to Recreational Resources: The proposed Project, in conjunction with the cumulative projects in the City, has the potential to increase demand on the City’s recreational resources. The cumulative Projects would also be subject to Municipal Code requirements for the provision of parkland and/or payment of in-lieu fees. Therefore, the cumulative impact of the proposed Project and the applicable related projects would be less than significant with respect to recreational facilities.	Potentially Significant Impact	Refer to Mitigation Measure 4.15.1 and RCM REC-1	Less than Significant Impact
4.16: Transportation and Traffic			
Threshold 4.16.1: The proposed Project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Potentially Significant Impact	<p>Mitigation Measure 4.16.1 Construction Traffic Management Plan. Prior to the issuance of grading permits, the Project Applicant/Developer shall prepare a Construction Traffic Control Plan for approval by the City of Lake Forest Director of Public Works/City Engineer, or designee, and shall implement the Plan during Project construction with the goal of maintaining acceptable intersection levels of service (LOS) during peak traffic hours. At a minimum, the Construction Traffic Management Plan shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> Provisions for temporary traffic control during all construction activities adjacent to public right-of-way to improve traffic flow on public roadways and ensure the safe access into and out of the site (e.g., warning signs, lights and devices, and flag person). The delivery and removal of heavy equipment shall occur outside of the morning and evening peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday). Routine street closures shall be planned to occur outside of the morning and evening peak traffic hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday). Soil import and export activity shall not be permitted during the morning and evening peak traffic hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday). Rerouting construction trucks to reduce travel on congested streets. Prohibiting construction-related vehicles from parking on public streets. Providing safety precautions for pedestrians and bicyclists through such measures as alternate routing and protection barriers. Scheduling construction-related deliveries, other than concrete and earthwork-related deliveries, so as to reduce travel during peak travel periods. Obtaining the required permits for truck haul routes from the City of Lake Forest and/or Caltrans. All emergency access to the Project site and adjacent areas shall be kept clear and unobstructed during all phases of demolition and construction. The Orange County Sheriff’s Department and the Orange County Fire Authority (OCFA) shall be notified a minimum of 1 week (7 days) in advance of any lane closures or roadway work so that emergency vehicles can be rerouted during construction if deemed necessary in the expert opinion of the Orange County Sheriff’s Department and/or OCFA. 	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> The Orange County Transportation Authority (OCTA) shall be notified regarding any affected locations a minimum of 10 working days prior to construction so that transit service can be rerouted if deemed necessary in the expert opinion of the OCTA. Flag persons shall be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. <p>Mitigation Measure 4.16.2 Intersection Improvements. Unless physical improvements are already constructed, prior to issuance of the first final building inspection certificate of occupancy, the City of Lake Forest Project Applicant/Developer shall construct a second northbound left-turn lane at the intersection of Bake Parkway/Jeronimo Road consistent with the design requirements of the City of Lake Forest.</p>	
Threshold 4.16.2: The proposed Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b).	No Impact	No mitigation is required.	No Impact
Threshold 4.16.3: The proposed Project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Potentially Significant Impact	<p>Mitigation Measure 4.16.3 Sight Distance Analysis. Prior to issuance of precise grading permits and building permits, the Project Applicant/Developer shall prepare a detailed sight distance analysis for all Project intersections. The sight distance analysis shall be prepared according to the City of Lake Forest Municipal Code and the Caltrans Highway Design Manual standards and guidelines, and indicate limited use areas (e.g., low height landscaping), and on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right in/right-out). Intersections on Bake Parkway, which has a 50 mph posted speed limit, should be provided with a minimum of 430 feet of stopping sight distance according to the Caltrans Highway Design Manual. Intersections internal to the project site would have a 25 mph speed limit and would require a minimum of 150 feet of stopping sight distance according to the Caltrans Highway Design Manual. The findings of the sight distance analysis shall be included in a report(s) subject to review and approval by the Directors of Planning and Building and Public Works, or designees.</p> <p>Mitigation Measure 4.16.4 Rectangular Rapid Flashing Beacons (RRFBs). Prior to issuance of the first final building inspection certificate of occupancy, RRFBs shall be installed at the crosswalks at the uncontrolled intersection of "B" Street/"BB" Street and the uncontrolled intersection of "A" Street/"D" Street.</p>	Less than Significant Impact
Threshold 4.16.4: The proposed Project would result in inadequate emergency access.	Potentially Significant Impact	Refer to Mitigation Measure 4.16.1 above.	Less than Significant Impact
Cumulative Impacts to Transportation and Traffic: The proposed Project's contribution to cumulative traffic impacts would be less than significant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.17: Tribal Cultural Resources			
Threshold 4.16.1: The proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).	No Impact	No mitigation is required.	No Impact
Threshold 4.16.2: The proposed Project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.	Potentially Significant Impact	Refer to Mitigation Measure 4.5.1 (Cultural Resources) above.	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
Cumulative Impacts to Tribal Cultural Resources: The proposed Project's contribution to cumulative tribal cultural resource impacts would be less than significant.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.18: Utilities and Service Systems			
Threshold 4.18.1: The proposed Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Less than Significant Impact	Refer to Regulatory Compliance Measures AQ-4 (Air Quality) and GHG-1 (Greenhouse Gas)	Less than Significant Impact
Threshold 4.18.2: 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 is required.	Less than Significant Impact
Threshold 4.18.3: The proposed Project would result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.18.4: 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 is required.	Less than Significant Impact
Threshold 4.18.5: 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 is required.	Less than Significant Impact
Cumulative Impacts to Utilities and Service Systems: The proposed Project's potential impacts to wastewater, portable water, solid waste, electricity, natural gas, and telecommunications services are not cumulatively considerable.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
4.19: Wildfire			
Threshold 4.19.1: The proposed Project would not impair an adopted emergency response plan or emergency evacuation.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.19.2: The proposed Project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and therefore would not expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Less than Significant Impact	No mitigation is required.	Less than Significant Impact
Threshold 4.19.3: The proposed Project 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.	No Impact	No mitigation is required.	No Impact
Threshold 4.19.4: The proposed Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff post-fire slope instability, or drainage changes.	Less than Significant Impact	<p>RCM FIRE-1: Fire Protection Plan. The Project shall adhere to Chapter 7A of the CBC and/or Section R337 of the California Residential Code (CRC). All structures in the Nakase community shall adhere to the standards from Chapter 7A of the CBC and/or Section R337 of the CRC pertaining to roofing and venting to help prevent the intrusion of embers into structures. Residences adjoining the Fuel Management Zones shall meet all applicable standards set forth in Section R337 of the CRC because those structures would have direct exposure to the native vegetation beyond the Fuel Management Zones.</p> <p>RCM FIRE-2: Fire Master Plan. The Project Applicant/Developer shall develop a Fire Master Plan that identifies the proper installation and maintenance of fire access roadways, the locations of fire hydrants, a sufficient water supply, and emergency access to residences and structures within the Project site as required by the most current California Fire Code and Lake Forest Municipal Code.</p>	Less than Significant Impact

Table 1.A: Summary of Project Impacts, Regulatory Compliance Measures, Mitigation Measures, and Level of Significance after Mitigation

Environmental Impact	Level of Significance Prior to Mitigation	Regulatory Compliance Measures and Mitigation Measures	Level of Significance After Mitigation
		<p>RCM FIRE-3: Fuel Modification Plan. –<i>Technical Design for New Construction Fuel Modification Plans and Maintenance Program</i> A preliminary Fuel Modification Plan shall be submitted to and approved by the Fire Code Official prior to or concurrently with the approval of the tentative map.</p> <p>2. A final Fuel Modification Plan shall be submitted to and approved by the Fire Code Official prior to the issuance of the grading permit.</p> <p>3. The Fuel Modification Plan shall meet the criteria set forth in the Fuel Modification Section of –<i>Technical Design for New Construction Fuel Modification Plans and Maintenance Program</i>.</p> <p>4. The fuel modification plan shall include provisions for the maintenance of the fuel modification in perpetuity.</p> <p>5. The Fuel Modification Plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approval from the Fire Code Official.</p> <p>6. All elements of the Fuel Modification Plan shall be maintained in accordance with the approval plan and are subject to the enforcement process outlined in the California Fire Code.</p>	
<p>Cumulative Impacts to Wildfire: The proposed Project and all related projects are required to adhere to City, State, and federal regulations designed to reduce and/or avoid impacts related to wildfire. With compliance with these regulations, cumulative impacts related to wildfire would be less than significant.</p>	<p>Less than Significant Impact</p>	<p>No mitigation is required.</p>	<p>Less than Significant Impact</p>

¹ Hazardous fire areas include all areas identified within California Fire Code Section 4906.2 and other areas as determined by the Fire Code Official as presenting a fire hazard due to the presence of combustible vegetation, or the proximity of the property to an area that contains combustible vegetation.

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2.0 INTRODUCTION

This Environmental Impact Report (EIR) has been prepared to evaluate environmental impacts associated with the proposed Nakase Nursery/Toll Brothers Project (Project) in Lake Forest, California. The City of Lake Forest (City) is the “public agency which has the principal responsibility for carrying out or approving the project”¹ and, as such, is the “Lead Agency” for the proposed Project under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.). CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action on the proposed Project. This EIR is intended to serve as an informational document to be considered by the City and any Responsible Agencies during deliberations on the proposed Project. PRC Section 21069 defines a “Responsible Agency” as a public agency other than the Lead Agency that has responsibility for carrying out or approving a project. The approvals and permits associated with the proposed Project are described in Chapter 3.0, Project Description.

Based upon the Initial Study prepared for the proposed Project, the City, as Lead Agency, determined that the proposed Project may have a significant effect on the environment and that an EIR would be required to more fully evaluate potential adverse environmental impacts that may result from development of the proposed Project. As a result, this EIR has been prepared in accordance with CEQA and the *State CEQA Guidelines* (California Code of Regulations [CCR], Title 14, Section 15000 et seq.). This EIR also complies with the procedures established by the City for the implementation of CEQA.

Questions regarding the preparation of this document and City review of the proposed Project should be referred to the following person:

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

This EIR has been prepared to evaluate potential environmental impacts that could result from implementation of the proposed Project. As the Lead Agency, the City has the principal responsibility for approving the proposed Project. In that capacity, the City has decided to prepare this EIR and, after the public review process, will decide whether to certify the Final EIR.

The City and any Responsible Agencies have the authority to make decisions on discretionary actions relating to development of the proposed Project. As stated previously, this EIR is intended to serve as an informational document to be considered by the City and Responsible Agencies during

¹ As defined in PRC Section 21067.

deliberations on the proposed Project. This EIR evaluates a reasonable worst-case scenario of potential impacts associated with the proposed Project and identifies feasible mitigation and alternatives for any identified potentially significant impacts.

This EIR will serve as a Project EIR pursuant to *State CEQA Guidelines* Section 15161. According to Section 15161 of the *State CEQA Guidelines*, a Project EIR is appropriate for specific development projects and should examine the environmental impacts that could result from all phases of the project, including planning, construction, and operation.

As the Lead Agency for the proposed Project under CEQA, the City must consider the information contained in the Final EIR prior to taking any discretionary action with respect to the proposed Project. This EIR provides information to the Lead Agency and other public agencies, the general public, and decision-makers regarding the potential environmental impacts from construction and operation of the proposed Project. The purpose of the public review of this EIR is to evaluate the adequacy of the environmental analysis in terms of compliance with CEQA. *State CEQA Guidelines* Section 15151 states the following regarding standards from which adequacy is judged:

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

PRC Section 21002.1(a) states:

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

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

2.2 PUBLIC REVIEW PROCESS

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

2.2.1 Notice of Preparation

On July 16, 2018, an NOP for the proposed Project was distributed by the City via the State Clearinghouse (SCH). The SCH issued a project number for this EIR (SCH No. 2018071035). In accordance with *State CEQA Guidelines* Section 15082, the NOP was circulated to the agencies and individuals listed in Appendix A and was posted at the Orange County Clerk's Office for a period of 30 days, during which time written comments were solicited pertaining to environmental issues/topics that this EIR should evaluate. The NOP was also made available for public review at the City's Planning Department and on the City's website during the review period. Responses to the NOP were received from the following agencies:

- Governor's Office of Planning and Research, State Clearinghouse
- South Coast Air Quality Management District (SCAQMD)
- Southern California Association of Governments (SCAG)
- Southern California Edison (SCE)
- Santa Ana Regional Water Quality Control Board (RWQCB)
- Saddleback Valley Unified School District (SVUSD)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- City of Irvine
- Irvine Ranch Water District (IRWD)
- Native American Heritage Commission (NAHC)
- Natural Communities Coalition
- Orange County Public Works
- Orange County Fire Authority (OCFA)
- Transportation Corridor Agencies (TCA)

In addition, the following organizations and interested parties submitted written comments on the NOP:

- Autumnwood Homeowners Association
- Andrea Alexander
- Bob Holtzclaw
- Bob Stuart
- Charles Larson
- Judy Esposito
- Loretta Herrin
- Richard Sullivan
- Robert (Tim) and Melissa Leech
- Sima Soltani
- Sue Nath

2.2.2 Scoping Meeting and Areas of Controversy

The City held a public scoping meeting at Lake Forest City Hall on Wednesday, July 25, 2018, to present the proposed Project and to solicit input from interested parties regarding environmental issues that should be addressed in this EIR. The material environmental issues and concerns raised in response to the NOP or at the scoping meeting included:

- **Traffic:** Concerns about additional traffic on Bake Parkway and the appropriate number of traffic lanes on Bake Parkway, evaluation of a traffic signal coordination program along Bake Parkway, concern regarding traffic conditions during peak hours, pedestrian and bike safety, parking issues, traffic-related air and noise pollution, concern with vehicle queuing and parking on nearby roads, concern about school-related traffic impacts, and concern about truck and motorcycle traffic on Bake Parkway.
- **Noise:** Concerns about traffic-related increases in noise pollution, suggestions of noise mitigation, including special pavement, triple-paned windows, or a noise barrier along Bake Parkway, concern with noise level along Bake and Rancho Parkways, concern about existing truck and motorcycle noise along Bake Parkway, concern about lack of enforcement of the City's noise ordinance, and concern about elevated backyard noise levels.
- **Air Quality:** Concern about additional vehicle emissions, concern about worsening air quality in adjacent neighborhoods, concern about particulate matter and carcinogens along Bake Parkway, suggestion to conduct sampling for particulate matter in neighborhoods along Bake Parkway between Trabuco Road and Portola Parkway, suggestion to prepare a health risk assessment for the project, suggestion to implement mitigation measures for the proposed project, and suggestion to adhere to guidelines from the SCAQMD and its *Air Quality Handbook*.
- **Alternatives:** Suggestion to evaluate the development of a park and/or garden on the Nakase site, suggestion to make the site into a community garden or forest, suggestion to more clearly define the Project's scope and evaluate a range of alternatives, and suggestion to pursue alternatives that would substantially lessen the project's air quality impacts.
- **Biological Resources:** Concern about potential impacts to coastal sage scrub and associated species, suggestion to include mitigation measures for potential impacts to riparian corridors and wetlands, suggestion to complete jurisdictional delineation, apply for Lake and Streambed Alteration Agreement, and to satisfy the California Endangered Species Act Incidental Take Permit requirements, suggestion to avoid impacts where feasible and to mitigate for impacts to rare natural communities and sensitive plants, animals, or habitats, and concern to avoid impacts to nesting or migratory birds.
- **Hazards and Hazardous Materials:** Suggestion to complete a Water Pipeline Risk Assessment and Electromagnetic Field (EMF) study for the proposed school site, suggestion that the significance conclusion related to wildland fire hazards be revised to reflect a Fuel Modification Conceptual Plan and a Fire Protection Plan with an Ember Mitigation have been approved for the project, and suggestion to ensure that floodplains are identified and structures conform to

Federal Emergency Management Agency (FEMA) regulations with regard to placement adjacent to flood hazards.

- **Hydrology:** Suggestion to review all local hydrology and hydraulic analyses to confirm the Project is protected from erosion and flooding, concern about increased runoff caused by the project, suggestion to incorporate mitigation measures to reduce impacts to hydrology, erosion, and flooding, and concerns about impacts to water quality and storm water runoff.
- **Land Use/Planning:** Opposition to zoning change for the nursery, concern about the Project's consistency with the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and suggestion to include a direct comparison with the plan, suggestion to incorporate practices and policies that would reduce greenhouse gas (GHG) emissions in accordance with Assembly Bill (AB) 32 and Senate Bill (SB) 375 into the Area Plan, and suggestion to ensure consistency with applicable general plan and regional plans.
- **Public Services:** Suggestion to implement mitigation measures to public services, including fire services, and concern about potential increase in demand for public services.

Please note that this is not an exhaustive list of areas of controversy, but rather key issues that were raised during the scoping process. This EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures and/or alternatives designed to reduce or eliminate potentially significant impacts. Appendix A to this EIR includes the NOP and copies of written comments received in response to the NOP, comments received via Facebook Live at the Public Scoping Meeting, as well as written comment cards received in response to the public scoping meeting. Appendix A also includes a comment summary.

2.2.3 EIR Public Review Period

This EIR is being distributed to numerous public agencies and other interested parties for review and comment. This EIR is also available at the following locations and on the City's website for the proposed Project (<https://www.lakeforestca.gov/924/Nakase-Property>):

City of Lake Forest
Community Development Department
Planning Division
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

Foothill Ranch Branch Library
27002 Cabriole
Foothill Ranch, CA 92610

El Toro Public Library
24672 Raymond Way
Lake Forest, CA 92630

All comments received from agencies and individuals on this EIR will be accepted during the public comment period, which will not be less than 45 days, in compliance with CEQA and the *State CEQA Guidelines*. All comments on this EIR should be sent to the following City contact person:

Marie Luna, Senior Planner
City of Lake Forest Community Development Department
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630
Email: mluna@lakeforestca.gov
Phone: (949) 461-3466

Following the close of the public comment period, the City will prepare written responses to all written comments received during the public comment period and will compile these comments and responses, together with any text changes to this EIR, into a Final EIR that includes all of the information required pursuant to *State CEQA Guidelines* Section 15132. The Final EIR will be provided to all public agencies that submitted comments on this EIR at least 10 days prior to certification of the Final EIR. The Final EIR shall consist of the EIR or a revision of the draft; comments and recommendations received on the EIR either verbatim or in summary; a list of persons, organizations, and public agencies commenting on the EIR; the response of the City to significant environmental points raised in the review and consultation process and in comments submitted on the Draft EIR; and any other information added by the City.

The City will make findings regarding the extent and nature of the impacts as presented in the Final EIR. The Final EIR must be certified as complete by the City Council prior to making a decision on the requested entitlements for the proposed Project. Public input is encouraged at all public hearings regarding the proposed Project.

2.3 SCOPE OF THIS EIR

As required by *State CEQA Guidelines* Section 15128, this EIR must identify the effects of the proposed Project that are determined to be significant. Environmental topics addressed in this EIR include: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Paleontological Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Public Services, Recreation, Transportation and Traffic, Tribal Cultural Resources, Utilities, and Wildfire.

As discussed in Section 2.2 above, the scoping process for this EIR included the preparation of an Initial Study. Per *State CEQA Guidelines* Section 15063, the City conducted an Initial Study to determine whether the proposed Project could have a significant effect on the environment. The City determined that the proposed Project may have a significant impact on the environment and issued an NOP soliciting comments from Responsible and Trustee Agencies and other interested parties, including members of the public. In addition to identifying potentially significant impacts of the proposed Project that required additional study, the Initial Study also identified effects determined not to be significant consistent with *State CEQA Guidelines* Section 15063(c)(3)(B). Impacts that were determined to be less than significant are discussed and evaluated in the Initial Study, which is included in Appendix A of this EIR. The analysis determined that the proposed Project would not have the potential to cause significant impacts in the following areas:

- Aesthetics (related to daytime glare, unscreened outdoor uses, building massing, contrasting architectural styles)
- Agriculture and Forestry (related to conflicts with existing zoning for forest land and the loss or conversion of forest land)
- Air Quality (odors)
- Geology and Soils (Alquist-Priolo Earthquake Fault Zones, landslides, and soils capability to support the use of septic tanks or other alternative wastewater disposal systems)
- Hazards and Hazardous Materials (wildland fires)
- Hydrology and Water Quality (flooding, flood hazard areas, and inundation)
- Land Use and Planning (division of an established community)
- Mineral Resources
- Population and Housing (displacement of housing and people)
- Transportation (parking)
- Utilities and Service Systems (wastewater treatment requirements of the applicable RWQCB)

Topics that would not have the potential to cause significant impacts are discussed solely in the Initial Study and can be found in Appendix A of this EIR. The City's Initial Study and Environmental Checklist Form are discussed in Chapter 4.0 of this document, and a copy of the Initial Study and Environmental Checklist for the proposed Project is included in Appendix A of this EIR.

2.4 FORMAT OF THE EIR

This EIR contains the information and analysis required by CEQA and the *State CEQA Guidelines*, including Section 15122–15131, and is generally organized as follows:

- **Chapter 1.0: Executive Summary.** Chapter 1.0 contains the Executive Summary of this EIR, which lists all significant project impacts, feasible mitigation measures that have been recommended to reduce any significant impacts of the proposed Project, and the level of significance of each impact following feasible mitigation. The summary is presented in a table format.
- **Chapter 2.0: Introduction.** Chapter 2.0 contains a discussion of the purpose and intended use of this EIR.
- **Chapter 3.0: Project Description.** Chapter 3.0 includes a discussion of the proposed Project's geographical setting, the project site's previous uses, and the proposed Project's objectives, characteristics, components, and construction phases, as well as the anticipated discretionary and ministerial permits and approvals for the proposed Project.

- **Chapter 4.0: Environmental Impact Analysis.** Chapter 4.0 includes an analysis of the proposed Project's environmental impacts. It is organized into the following topical sections: aesthetics, agricultural 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, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service system, and wildfire. The environmental setting discussions describe the "existing conditions" of the environment on the Project site and in the vicinity of the site as they pertain to the environmental issues being analyzed (*State CEQA Guidelines* Section 15125).

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

Chapter 4.0 also includes within the analysis of each environmental topic a discussion of the cumulative effects of the proposed Project when considered in combination with other projects causing related impacts, as required by *State CEQA Guidelines* Section 15130. Cumulative impacts are based on the build out of the proposed Project and the known relevant approved and proposed projects in the surrounding area.

The discussions of mitigation measures identify and describe feasible measures that could minimize or lessen potentially significant impacts for each significant environmental effect identified in this EIR (*State CEQA Guidelines* Section 15126[e]). The levels of significance before and after mitigation are provided. Significant unavoidable adverse effects are identified where mitigation is not expected to reduce the effects to less than significant levels.

- **Chapter 5.0: Alternatives to the Proposed Project.** In accordance with CEQA, the alternatives discussion in Chapter 5.0 describes a reasonable range of alternatives that could feasibly attain the basic objectives of the proposed Project and are capable of eliminating or substantially reducing any of the proposed Project's significant unavoidable adverse environmental effects or reducing them to a less than significant level. The alternatives analyzed in Chapter 5.0 include a No Project/Business Park Alternative (existing General Plan), Urban Industrial/Residential, No School Alternative, and a Reduced Project Alternative.
- **Chapter 6.0: Other CEQA Considerations.** Chapter 6.0 contains discussions on the following topics as required by *State CEQA Guidelines* Section 15126: (1) growth-inducing impacts of the proposed Project; and (2) whether there are any significant adverse environmental impacts associated with the proposed Project for which either no mitigation or only partial mitigation is feasible.

- **Chapter 7.0: List of Preparers.** Chapter 7.0 provides the organizations and persons contacted during preparation of this EIR, the EIR preparers and technical report authors, and other experts involved in the preparation of this EIR.
- **Chapter 8.0: References.** Chapter 8.0 provides the references used in this EIR.

2.5 INCORPORATION BY REFERENCE

An EIR may incorporate by reference all or portions of another document that is a matter of public record or is generally available to the public, consistent with *State CEQA Guidelines* Section 15150. Informational details from the documents that have been incorporated by reference are summarized in the appropriate sections of this EIR, along with descriptions regarding how the public may review these documents. All documents are available for review at the City of Lake Forest, Planning Division. These documents include:

- City of Lake Forest General Plan (available online at: <https://www.lakeforestca.gov/292/Planning-Documents>)
- City of Lake Forest Municipal Code (available online at: <https://qcode.us/codes/lakeforest/>)

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3.0 PROJECT DESCRIPTION

This section describes the proposed Nakase Nursery/Toll Brothers Project (Project) evaluated in this Environmental Impact Report (EIR). A description of the proposed Project's location, objectives, and required approvals is provided.

3.1 REGIONAL LOCATION

The Nakase property (Project site) is located in the north-central portion of Lake Forest in Orange County, California. As shown on Figure 3.1, regional access to the Project site is provided by State Route 241 (SR-241), which is located approximately 0.07 mile (mi) northeast of the Project site, and Interstate 5 (I-5), which is located approximately 3.8 mi southwest of the Project site.

3.1.1 Project Vicinity and Surrounding Land Uses

The 122-acre (ac) Project site (Assessor's Parcel Number [APN] 612-221-01) is currently operating as the Nakase Brothers Wholesale Nurseries, an agricultural wholesale plant nursery. Refer to Figure 3.2 for the Project vicinity.

The areas surrounding the Project site consist of a mix of land uses, including commercial, office, open space, industrial, and residential uses. The Project site is bounded on the northwest by Bake Parkway, on the northeast by Rancho Parkway, on the southeast by the Serrano Creek Trail, and on the southwest by commercial, industrial, and office uses, with Dimension Drive beyond. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the Project site. As noted above, SR-241 is approximately 0.07 mi northeast of the Project site. Surrounding land uses are shown on Figure 3.3.

Residential planned communities in the vicinity of the Project site include the Foothill Ranch Planned Community (PC 8) to the north, the Portola Hills Planned Community (PC 9) to the northeast, the Baker Ranch Planned Community (PC 7) to the west, and the Rancho de Los Alisos Planned Community (PC 3) to the southeast.

3.2 ENVIRONMENTAL SETTING

3.2.1 Existing Project Site Conditions

The Project site is currently developed with multiple structures used for nursery operations, an office trailer, and a gravel parking lot that is used for trailer storage and staff parking near the center of the Project site. Figure 3.4 provides photographs of existing conditions on the Project site.

A 20-foot (ft) Southern California Edison (SCE) easement is located adjacent to Bake Parkway on the Project site. In addition, there is a 20 ft wide water line easement that extends along the entire length of the Project site's southwestern property line, and an active irrigation water well that is roughly in the center of the Project site.

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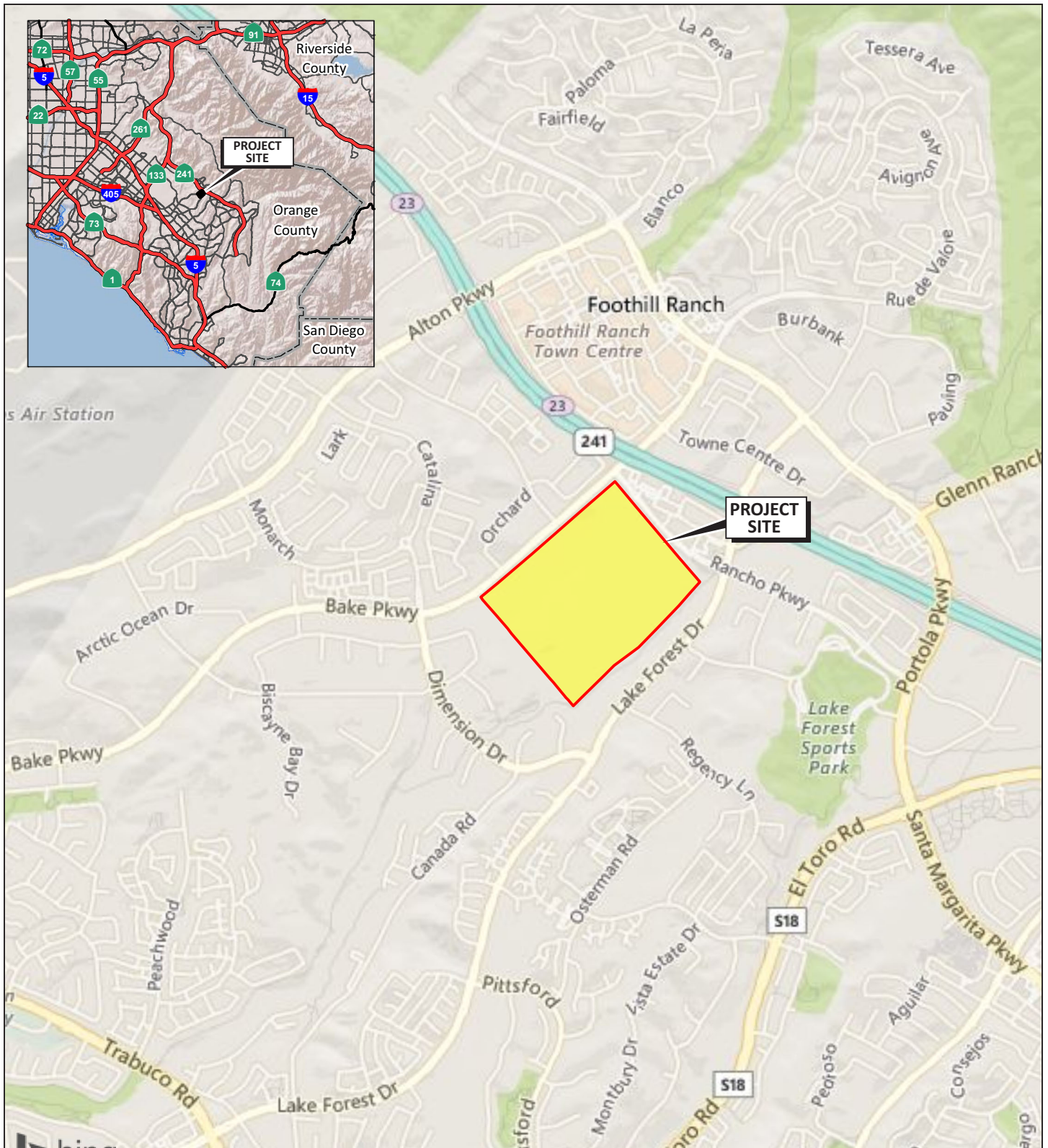
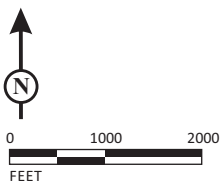


FIGURE 3.1

LSA



SOURCE: Bing Maps

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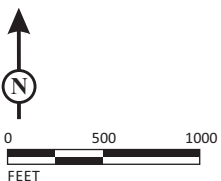
Nakase Nursery/Toll Brothers
Regional Project Location

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LSA

FIGURE 3.2



SOURCE: Bing Maps

Nakase Nursery/Toll Brothers
Project Vicinity

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LEGEND

Project Site

LandUse

- Single Family Residential
- Multi-Family Residential
- General Office
- Commercial and Services

- Institutional
- Industrial
- Transportation, Communications, and Utilities
- Mixed Commercial and Industrial
- Open Space and Recreation
- Agriculture



SOURCE: Bing (2017)

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FIGURE 3.3

Nakase Nursery/Toll Brothers
Existing Land Uses

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View facing south from Bake Parkway.



View facing east from Bake Parkway.



View facing south from Rancho Parkway.



View facing west from Rancho Parkway.

LSA

FIGURE 3.4

*Nakase Nursery/Toll Brothers
Existing Site Photos*

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In the existing condition, there is one vehicular access point to the Project site via a non-exclusive easement between adjacent properties to the south. The easement extends from Lake Forest Drive, directly north of Dimension Drive, to the southernmost point of the Project site. Manufactured landscape slopes, chain-link fences, and block walls enclose the Project site. In addition, several mature trees line the northeastern and southeastern boundaries of the Project site.

3.2.2 Current General Plan Land Use Designation

The City's General Plan designates the Project site as Business Park and Business Development Overlay (BDO). The Business Park land use designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. The Business Park designation does not provide for agricultural uses. Thus, the existing land use is inconsistent with the current Business Park designation of the Project site.

The BDO designation applies to all areas designated for Commercial, Professional Office, Business Park, and Light Industrial land uses, and is intended to provide a balance of land uses that contribute to the future financial success of the City of Lake Forest (City). No proposed land use designation changes within the BDO may result in a loss of future net revenue for the City (City of Lake Forest 1994b). Refer to Figure 3.5 for the Project site's location in relation to the City's General Plan Land Use Map and the BDO.

3.2.3 Current Zoning

The Project site currently has a zoning designation of A1 – Agricultural District, which is intended to provide for agriculture, outdoor recreational uses, and other low-intensity uses requiring open space. According to Section 9.72.010 of the City's Zoning Code, the A1 – Agricultural District may be used as an interim zone in those areas that the General Plan may designate for more intensive urban uses in the future. Refer to Figure 3.6 for the Project site's location in relation to the City's Zoning Map.

3.2.4 Project Site History

Historically, the Project site has been used primarily for agriculture production. From 1938 through the late 1960s, the Nakase Nursery was developed with orchards. In the late 1960s, the northwestern portion of the Project site continued operation as an orchard while the remainder of the Project site was developed as a plant nursery. In 1988, the orchards were removed, and the entire Project site has been used as an agricultural wholesale plant nursery since the 1990s.

The previous site of the El Toro Marine Corps Air Station (MCAS) is located in Irvine, approximately 5 mi west of the Project Site. The El Toro MCAS was in operation from 1943 to 1999. In 2007, the El Toro MCAS site was redeveloped as the Orange County Great Park, located at 6950 Marine Way (Orange County Register 2006). When the El Toro MCAS was in use, the Project Site fell within the 65-decibel (dB) Community Noise Equivalent Level (CNEL) noise contour, which restricted residential uses on the property.

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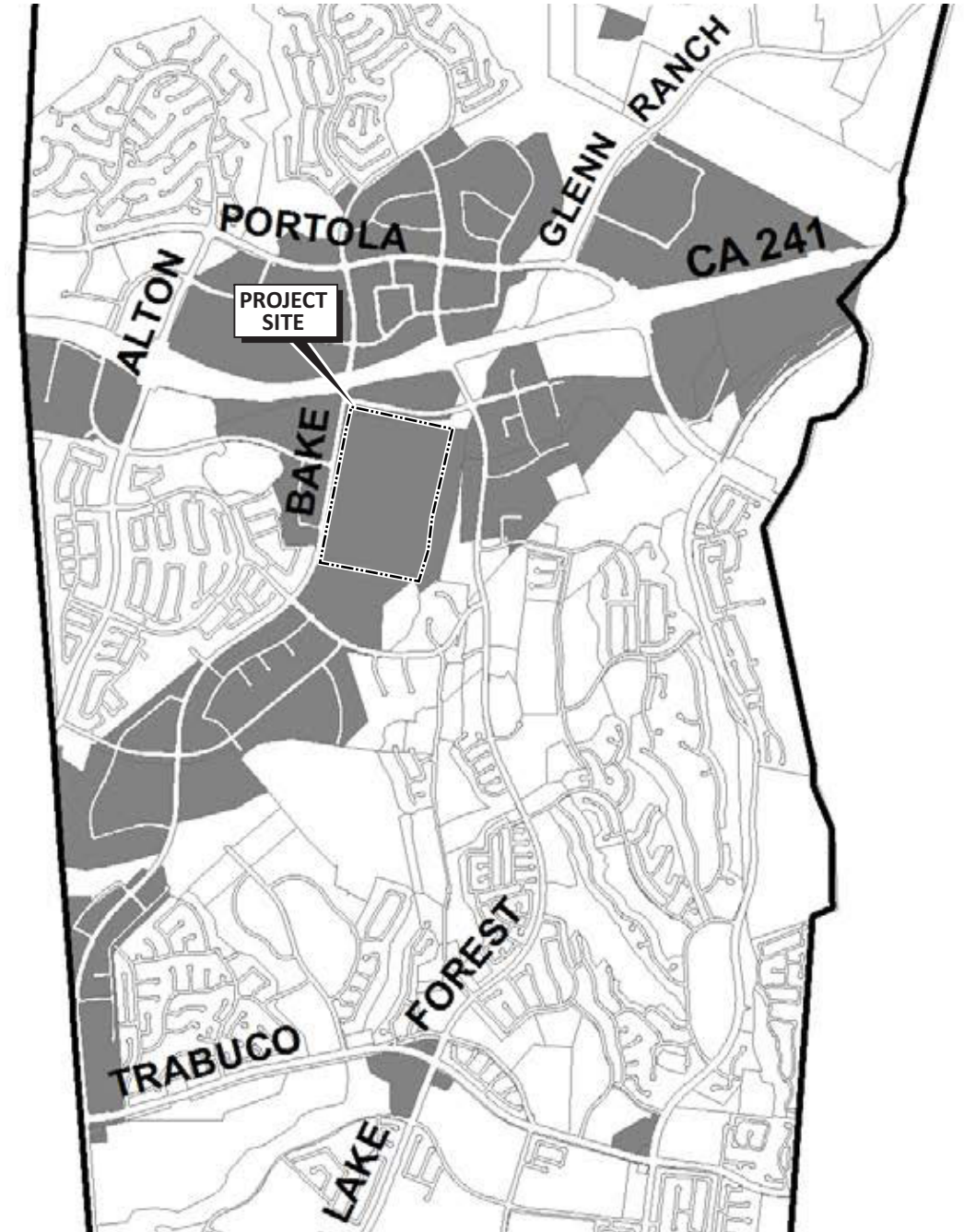
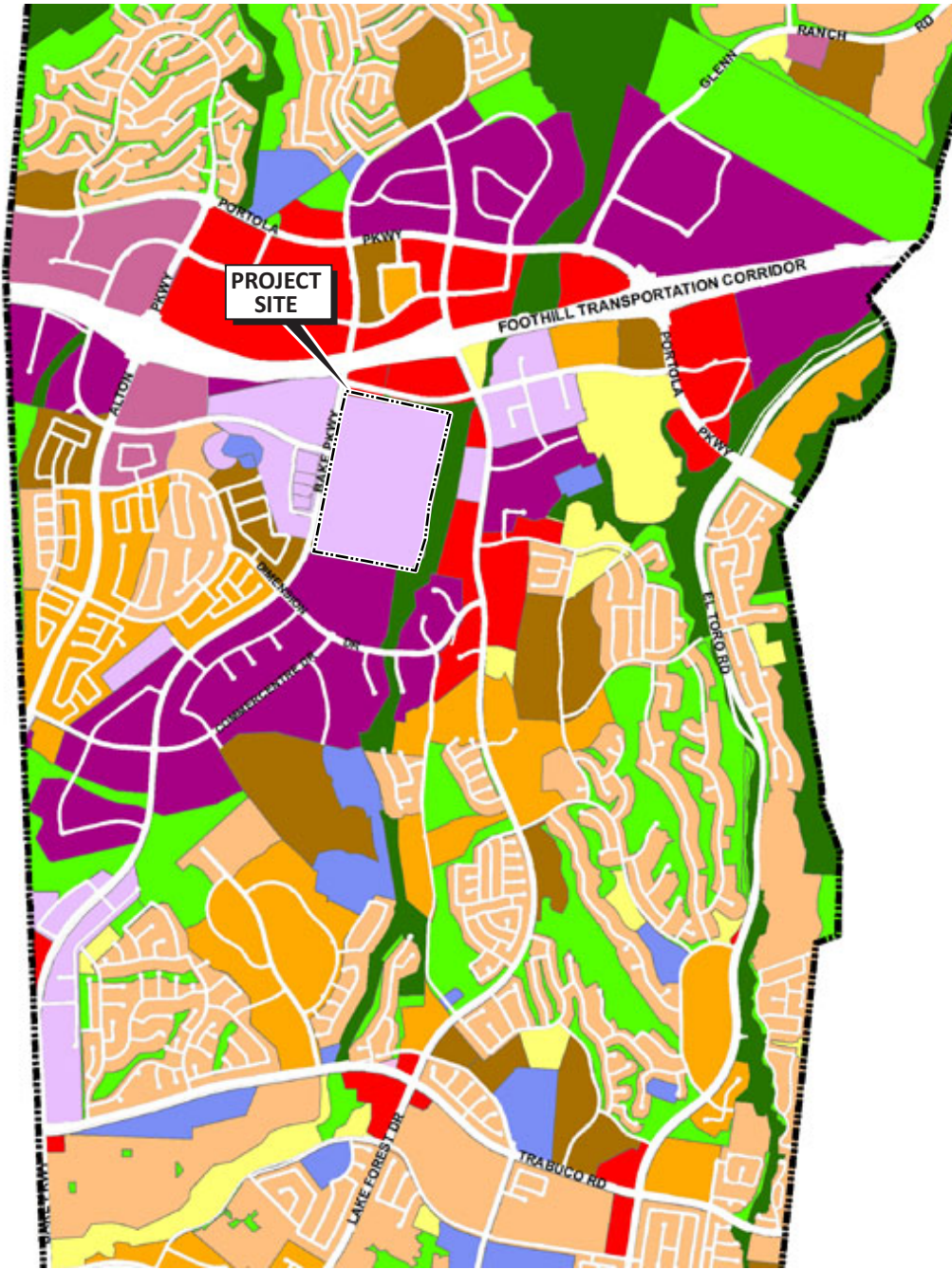
Land Use Designations

Residential Designations

- Very Low Density Residential (0 to 2 DUs/Net AC)
- Low Density Residential (2 to 7 DUs/Net AC)
- Low-Medium Density Residential (7 to 15 DUs/Net AC)
- Medium Density Residential (15 to 25 DUs/Net AC)
- High Density Residential (25 to 43 DUs/Net AC)

Non-Residential Designations

- Commercial
- Professional Office
- Mixed-Use
- Business Park
- Light Industrial
- Public Facility
- Community Park/Open Space
- Regional Park/Open Space
- Open Space
- Lake
- Transportation Corridor
- City Boundary



Business Development Overlay

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SOURCE: City of Lake Forest

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FIGURE 3.5

Nakase Nursery/Toll Brothers
General Plan Land Use and
Business Development Overlay

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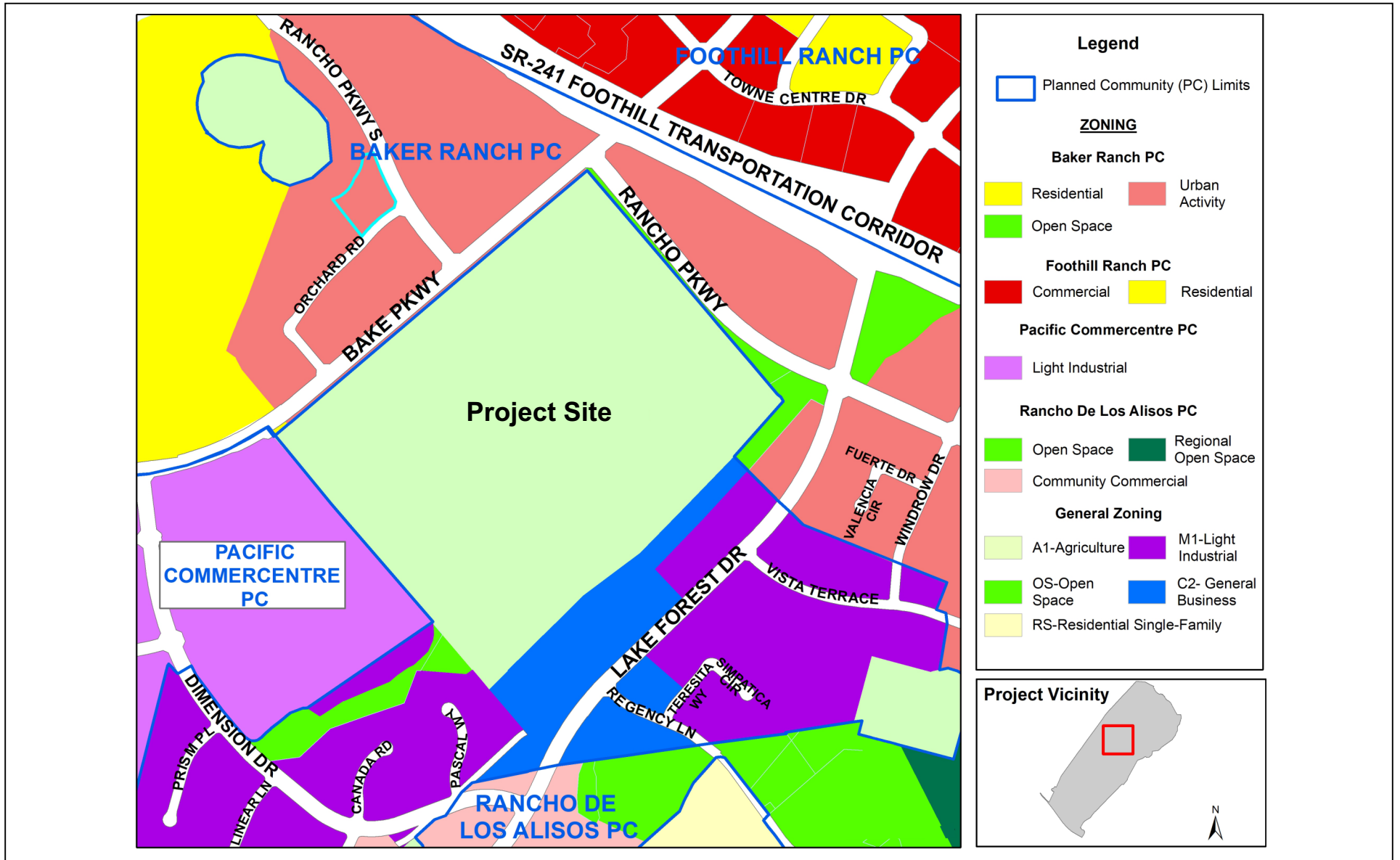


FIGURE 3.6

LSA



SOURCE: City of Lake Forest, 2019

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Nakase Nursery/Toll Brothers
Zoning Map

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After the El Toro MCAS was decommissioned in 1999, the City authorized the Opportunity Study Area (OSA), which was intended to identify potential land uses for properties that previously fell under the 65 dB CNEL noise contour. Approximately 838 ac of undeveloped properties were analyzed under the OSA, and the City initiated a General Plan Amendment (GPA) to allow the properties to change their land use designation to residential, mixed uses, and parks. However, owners of the Nakase property declined to participate in the OSA, thereby retaining the commercial and light industrial land use designation that currently characterizes the Project site. Following approval of the GPA, properties to the north and west of the Project site have been developed with new residential projects, including the Portola Hills and Baker Ranch Planned Communities.

3.3 PROJECT CHARACTERISTICS

3.3.1 Land Use Plan

The Project proposes the approval of the “Nakase Property Area Plan” (referred to hereafter as the Area Plan and/or the Project) (Woodley Architectural Group 2019), which would facilitate the development of the 122 ac Project site as a master planned community. The planned community would be consistent with neighboring developments, while also demonstrating a distinct community character and establishing a sense of place.

The Area Plan would establish guidelines for the future development of the planned community, which would consist of single-family residential units (contained in five distinct neighborhoods), affordable housing units for senior citizens with up to 10 of these units available for permanent supportive housing, an elementary school, parks and open space, and an internal circulation system. Refer to Figure 3.7 for the Conceptual Land Use Plan. Table 3.A summarizes proposed land uses associated with the Area Plan and gross acreages for each land use.

3.3.2 Residential Uses

The Project proposes up to 675 two- and three-story, single-family residential units on approximately 51 ac of the Project site. Five separate neighborhoods would each display a distinct style of single-family home. All neighborhoods feature low-medium density product types, with the exception of the Neighborhood Two alternative, which features a medium-density attached “rowtown” product.

To meet the City’s affordable housing policy as stipulated in the Housing Element (City of Lake Forest 2014), up to 101 senior affordable housing units (developed at a maximum density of 38.9 dwelling units per acre [du/acre]) would be constructed on 2.6 ac. The units would be available for rent, and the building would be two to three stories, with access provided by an elevator. The actual number of affordable units would be stipulated in the Development Agreement requirements.

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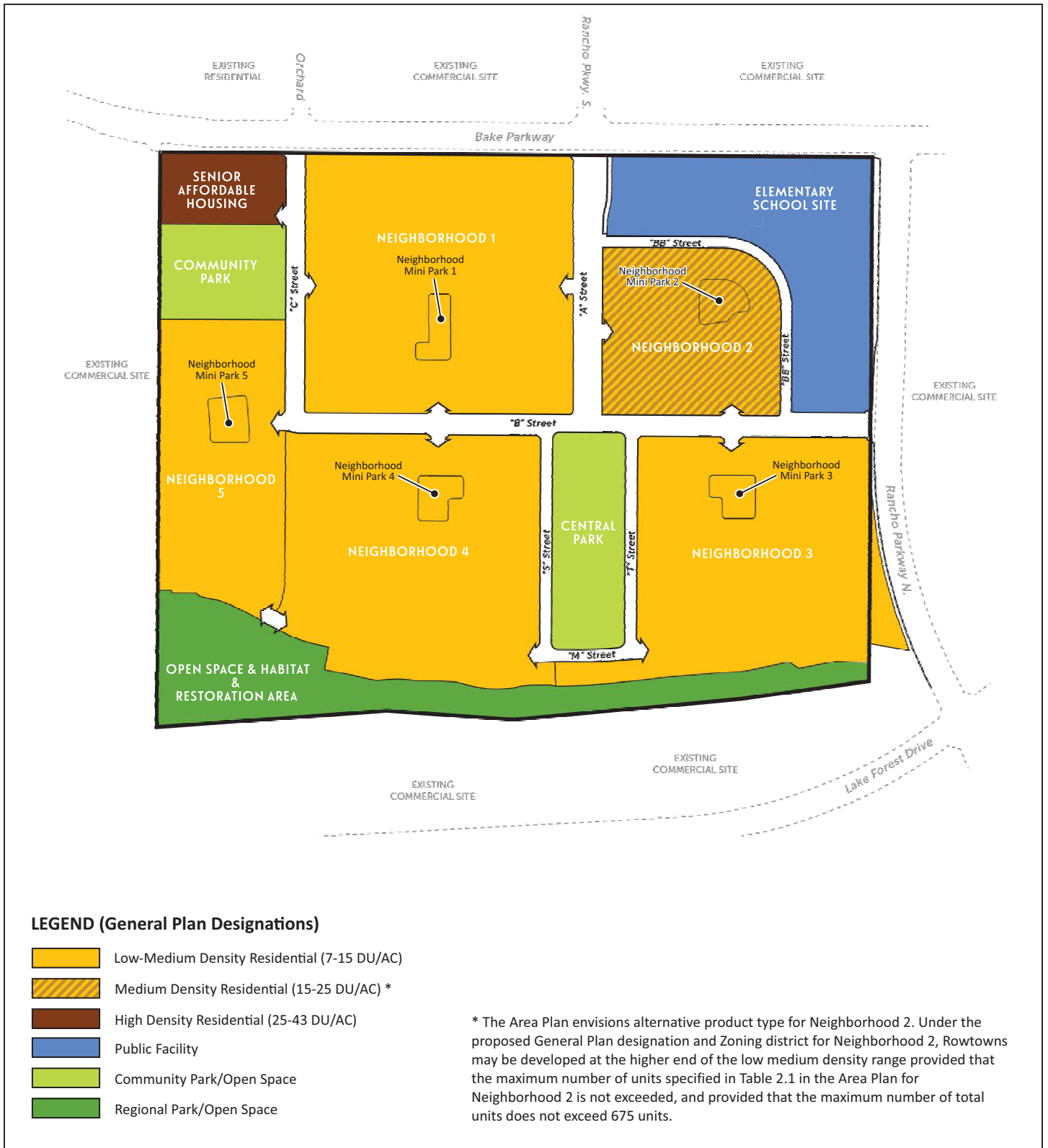
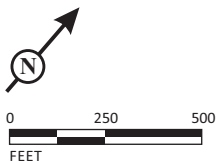


FIGURE 3.7

LSA



SOURCE: Nakase Property Area Plan (August 2019)

Nakase Nursery/Toll Brothers
Conceptual Land Use Plan

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Table 3.A: Land Use Summary

Area/Feature	Proposed Land Use Designation	Acreage
Parks and Open Space		
Central Park	Community Park/Open Space	2.3
Private Recreation Center	Community Park/Open Space	2.5
5 Neighborhood Mini-Parks	Low Medium and Medium Density Residential	2.62
Neighborhood Park	Community Park/Open Space	3.59
Open Space and Habitat and Restoration Area	Regional Park/Open Space	10.4
Total Acreage Allotted for Parks		21.41
Residential		
Neighborhood 1	Low-Medium Density Residential	12.8
Neighborhood 2	Medium Density Residential	5.6
Neighborhood 3	Low-Medium Density Residential	12.3
Neighborhood 4	Low-Medium Density Residential	13.0
Neighborhood 5	Low-Medium Density Residential	7.3
Total Residential Acreage		51
Senior Affordable Residential		
Senior Affordable Residential	High Density Residential	2.6
School		
Elementary School	Public Facility	11.5 (including 4.0 acres of fields)
Utilitarian		
Street Medians, & Parkways	N/A	12.5
Roads	N/A	22.8
Total Utilitarian		35.3

Source: Nakase Property Area Plan (Woodley Architectural Group 2019).

In addition, up to 10 of the residential units on the Project site would be permanent supportive housing (PSH)¹ units. The number of PSH units would not increase the total number of residential units on the Project site beyond 776 (675 single-family residential units plus 101 senior affordable units). All of the supportive services, if any, would be permitted by right within the zone.

Table 3.B provides a summary of the residential product types allowable under the proposed Area Plan, including the approximate net acreage, maximum density, and maximum number of units allowable within each neighborhood. Residential development potential would be limited by density and building heights. In no event would the total number of market rate dwelling units that may be developed pursuant to the Nakase Area Plan be higher than the maximum density established for all five neighborhoods.

The proposed Area Plan would allow adjustments to the number of residential dwelling in each neighborhood provided that the maximum number of 675 market-rate dwelling units established for the Nakase property is not exceeded and that maximum neighborhood densities remain below those set forth in Table 3.B. Such adjustments would occur at the time of final design of any portion of a particular neighborhood.

¹ According to the United States Interagency Council on Homelessness, PSH combines non-time-limited affordable housing assistance with wrap-around supportive services for people experiencing homelessness, as well as other people with disabilities.

Table 3.B: Residential Product Summary

Neighborhood	Product Type	Net Acres	Maximum Density ³	Maximum No. of Units
1	Garden Clusters	12.8	14.2 du/ac	182
2	Sky Terraces/Rowtowns ¹	5.6	21.6 du/ac (applies to alternate rowtowns; otherwise, 15 du/ac)	121
3	Cottage Homes	12.3	11.4 du/ac	141
4	Traditional Single Family Homes	13.0	10.4 du/ac	135
5	Estate Homes/Backyard Towns ²	7.3	13.2 du/ac	96
Subtotal		51	–	675
N/A	Senior Affordable Housing	2.6	38.9 du/ac	101
GRAND TOTAL		53.6	–	776

Source: *Nakase Property Area Plan* (Woodley Architectural Group 2019).

- ¹ The Area Plan envisions alternative product type for Neighborhood Two. Under the proposed General Plan designation and Zoning district for Neighborhood Two, rowtowns may be developed at the higher end of the low-medium density range provided the maximum number of units allowable in Neighborhood Two (121 units) is not exceeded and that the maximum number of total units in the Area Plan does not exceed 675 units.
- ² The Backyard Towns in Neighborhood Five are an alternative product that maintains the same maximum density as the standard Estate Homes product for the neighborhood.
- ³ Section 2.3.8 of the Area Plan would allow for the transfer of dwelling units among the various neighborhoods, provided that the maximum number of 675 dwelling units established for the Nakase property is not exceeded and that the maximum neighborhood densities remain below those set forth in Tables 2.1 and 2.3 of the Area Plan.
du/ac = dwelling units per acre

Any requests for a transfer of market-rate dwelling units would require a Site Development Permit to be approved by the City’s Planning Commission and would require: (1) an analysis of the other Nakase Planning Areas to ensure that the maximum number of dwelling units is not exceeded for the Area Plan as a whole, and (2) a demonstration that the specific development projects remain within the maximum density for each neighborhood. In the event the dwelling units are transferred, the applicable Area Plan exhibits would need to be updated to reflect the requested changes in dwelling units.

3.3.3 Elementary School

The proposed elementary school would accommodate up to 1,000 students from kindergarten through sixth grade. As shown on Figure 3.7, the school site would be located on the northeastern portion of the Project site at the corner of Bake Parkway and Rancho Parkway. Should the City Council approve the proposed Project, and subject to the Saddleback Valley Unified School District (SVUSD) environmental review and approval of the school site and the California Department of Education’s (CDE) final site approval and completion of grading and backbone infrastructure, the Project Developer would dedicate the elementary school site to the SVUSD. It is the Project Applicant/Developers’ intent that the school site be dedicated prior to or upon approval and recordation of the Final Map in conjunction with completion of site grading and backbone infrastructure, or as otherwise specified in the School Mitigation Agreement. In the event that SVUSD does not obtain CDE final site approval, medium residential and neighborhood park uses would be permitted on the school site. If the school site is developed with residential uses, the total number of residential units on the Project site would not exceed 675 residential units and 101 senior affordable rental units with up to 10 of these units available for permanent supportive housing.

3.3.4 Parks, Recreation, and Open Space

The Area Plan provides approximately 24.9 ac of parks, open space, and habitat restoration area. Table 3.C summarizes proposed park and open space uses. The location of park and open spaces uses is shown in Figure 3.7. The proposed Project includes the creation of a 4.8 ac park (referred to as “Central Park”) in the central area of the Project site. There would be 2.5 ac of the Central Park devoted to a private recreational facility for resident use only that would include the following amenities: pools, shade structures, a community room, private restrooms, and other amenities (e.g., drinking fountains and trash receptacles). In addition, each of the five neighborhoods within the Area Plan would include a minimum 0.5 ac mini-neighborhood park, with all five mini-neighborhood parks totaling 2.62 ac. The proposed Project includes 11.8 ac of parks, open space, and habitat and restoration area. The Homeowner’s Association (HOA) would maintain in perpetuity all of the parks, open space, and habitat and restoration areas, as well as the two underground water facilities located at the site: (1) a water detention basin located beneath the open play area at the Central Park,¹ and (2) a water quality filtration system located 4 ft below the surface of the Neighborhood Park. All parks, with the exception of the private recreational facility (which would be available to residents only), open space, and habitat and restoration areas would be private but open for public use.

Table 3.C: Proposed Parks and Open Space

Park Name	Description	Acreage
Central Park	Private park located in the center of the Master Plan	2.29
Private Recreational Center	Private clubhouse located in the center of the Master Plan	2.5
Neighborhood 1 Park	Private park located in the center of the neighborhood	0.5
Neighborhood 2 Park	Private park located in the center of the neighborhood	0.54
Neighborhood 3 Park	Private park located in the center of the neighborhood	0.52
Neighborhood 4 Park	Private park located in the center of the neighborhood	0.52
Neighborhood 5 Park	Private park located in the center of the neighborhood	0.54
Community Park	Private park located on the southern edge of the site	3.59
Open Space & Habitat & Restoration Area	Extensive system of open space and habitat area located on the eastern portion of the site. In addition, an internal trail system connects Bake Parkway along "A" Street and extends through "B" and "C" Streets to the Serrano Creek Regional Trail.	0.8
Total Acreage Provided		11.8
Total Acreage Credited¹		11.32
Total Public Park Credit Required		11.37
Park Credit Deficit		0.05

Source: *Nakase Property Area Plan* (Woodley Architectural Group 2019).

¹ Based on Lake Forest Municipal Code 7.38.040 and subject to the Nakase Development Agreement, 1.15 acres of park credit per acre would be granted for public park creation and 0.25 acre of park credit per acre would be granted for private park/recreation center facilities of 0.5 acre or greater in size.

¹ The underground design of the water quality basins would allow for open space park uses above the structure. The structure would not be visible from the surface, with the exception of several maintenance access manholes.

3.3.5 Open Space & Habitat & Restoration Area

The Open Space & Habitat & Restoration Area would be located along the southeastern portion of the Project site, adjacent to Serrano Creek, and would total 10.4 ac. The Open Space & Habitat & Restoration Area includes an on-site trail that would provide pedestrian and bike connections between the Project site and the regional trail system (i.e., Serrano Creek Trail). Within the Open Space & Habitat & Restoration Area, the Project Applicant/Developer intends to create a minimum of 4.19 ac of riparian vegetation contiguous with the existing riparian canopy associated with Serrano Creek. This area would be irrigated only until plants are established, thereby creating a naturally self-sustaining native riparian habitat community.

The Open Space & Habitat & Restoration Area would be placed into a conservation easement or similar legal protection that would protect the lands in perpetuity. Lands within the conservation easement would be managed in perpetuity by a designated entity, approved by the City, and other than the City or the HOA. The Project Applicant/Developer would be responsible for setting up the conservation easement, and funding maintenance and management of conservation areas in perpetuity.

3.4 BUILDING AND SITE DESIGN

3.4.1 Architecture

The community features a series of character styles that reflect a California Contemporary aesthetic in its architectural style palette: Coastal Contemporary, California Modern, Modern Hacienda, and Spanish vernaculars. Together, the styles are intended to establish a cohesive community for the Nakase property that feels both contextual and altogether new in its expression. A brief description of each of the architectural styles is provided below.

3.4.1.1 Coastal Contemporary

The Coastal Contemporary merges streamlined forms, bold roof lines, stunning glass, and sharp metal details with subtle textures. Balanced, asymmetrical masses, deep roof overhangs, and carefully composed window patterns are essential for executing this style properly. Bay window projections framing window compositions are strongly encouraged as they add drama to Coastal Contemporary's inherent simplicity. The material palette is comprised predominantly of stucco, with accents of clean stone textures, metal, and rich wood tile. Stucco body colors should be light and tonal, allowing for bold, contrasting fascia and dark eyebrow roofs.

3.4.1.2 California Modern

The California Modern style is expressed through its sleek forms, structured massing, and minimalistic detailing. The style accentuates both the linear and vertical nature of the homes. This style is characterized by smooth stucco surfaces, metal canopy accents, and horizontal tile elements with floor-to-ceiling glass.

3.4.1.3 Modern Hacienda

Modern Hacienda is expressed through the purity of its forms, simplistic detailing, clean stucco, and rough stone textures, creating a style that is both rustic and elegant. The style follows plan forms ranging from simple rectilinear configurations to larger massing expressions. The roof forms utilize low-pitched gables with decorative corbel elements and exposed rafter tails. Clean, rectangular entries are highlighted by decorative precast and foam elements. Above all, the Modern Hacienda requires well-articulated details: gables with tight eaves, minimal overhangs at roofs, simple corbel details, decorative shutters, and refined wrought iron treatments.

3.4.1.4 Spanish

The Spanish style is an artful blend of Spanish Colonial and Spanish Eclectic vernaculars, with a refined edge. The style follows plan forms ranging from simple rectilinear configurations to larger massing expressions. The roof forms mirror that of the plan, combining low-pitched hipped roofs with decorative enclosed cornices. Simplistic in nature, clean stucco façades express the style's purity of forms, while wrought iron details, louvered shutters, and corner trim contribute to its articulation without becoming ornate and obtrusive.

3.4.2 Landscaping

In the existing condition, the Project site contains less than 0.5 ac of maritime succulent scrub occurring along the southwestern boundary of the Project site, riparian forest (best characterized as southern black willow forest) immediately adjacent to Serrano Creek, active agricultural areas, and bare ground that has been planted with ornamental trees, including Peruvian pepper tree and coast live oak. With the exception of the southern black willow forest, all existing landscaping on the Project site would be removed as part of Project implementation.

As illustrated on Figure 3.8, the Project would incorporate ornamental landscaping along Bake Parkway, Rancho Parkway, the Project site's southern boundaries, the internal access road, and throughout the Project site. Landscaping would include a variety of California friendly and drought-tolerant plants as specified in the Area Plan's Community Plant Material Guidelines. A multipurpose water quality basin would be located on the southwestern portion of the Project site.

On-site irrigation would include low-flow bubblers, spray heads, and drip systems, where applicable, to reduce the probability of water runoff and overspray. In addition, the proposed Project would also use irrigation controllers equipped with a soil moisture sensor, and rain shut-off and wind shut-off capabilities.

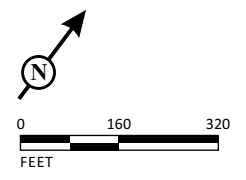
3.4.3 Fencing

Community walls and fences would be designed to emphasize the Contemporary California theme and provide community continuity. Walls would be used as safety buffers, noise abatement, and privacy buffers for the school and residences. Combination masonry with glass walls and tubular steel fences would be located along properties adjacent to open space areas, or where off-site views are desired. Proposed wall and fence locations are shown on Figure 3.9. The proposed Project includes the following theme fences and walls.

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FIGURE 3.8



SOURCE: Nakase Property Area Plan (June 2019)
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FIGURE 3.9

LSA



Nakase Nursery/Toll Brothers
 Wall and Fence Diagram

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- **Community Theme Sound Wall:** The masonry community theme sound walls would be located along Bake Parkway and Rancho Parkway in compliance with the City's interior and exterior noise standards. The walls would be a maximum of 8 ft in height per recommendations of a Noise Study to be submitted and as permitted by the City's Planning Commission upon approval of the Area Plan. Each community theme sound wall would be constructed so that the top of each barrier is at least 8 ft higher than the pad elevation of the lot it is shielding. When the road is elevated above the pad elevation, the barrier shall extend to the planned 8 ft height above the highest point between the residential home and the road. The barriers shall provide a weight of at least 4 pounds per square foot (lbs/sf) of face area with no decorative cutouts or line-of-sight openings between shielded areas and the roadways. The barrier must present a solid face from top to bottom. All gaps (except for weep holes) would be filled with grout or caulking.
- **Community Theme Solid Wall:** The community theme solid wall would be a 6 ft tall masonry wall. These walls may be higher than 6 ft if required for privacy, sound attenuation, or sloped condition with a Site Development Permit approval.
- **Community Theme Open View Glass Wall:** The community theme open view glass wall would be a low masonry wall with glass on the top or upper portion of the wall. The community theme open view glass wall would be a maximum of 8 ft in height. It would be located to enhance view opportunities while also serving as a fire protection feature.
- **Community Theme Open View Fence:** The community theme open view fence would be a painted 6 ft tall tubular steel fence used to enhance view opportunities while preventing access to adjacent slopes.
- **Community Theme Low Wall With Open View Fence:** The community theme low wall with open view fence would be a low masonry wall with tubular fence on the top or upper portion of the wall. The community theme low wall with open view fence would be a maximum height of 8 ft. It would be used to enhance view opportunities.
- **Side Yard Wall:** The side yard wall is a maximum 8 ft tall masonry wall that would be located at side yards to provide privacy between units.

In addition to the various theme walls, the proposed Project includes the use of conventional masonry retaining walls. Retaining walls within the Project site would conform to the City's Retaining Wall Design Guidelines.

3.4.4 Lighting

The Area Plan specifies that exterior and interior lighting shall be designed and located to be directional to confine direct lighting to the premises. Proposed on-site lighting includes, but is not limited to, street lights, parking lot lights, bollard lighting, and accent lighting on buildings.

3.4.5 Signage

The proposed Project would include community identification monument signs at each primary and secondary community entrance and at the entrance to each neighborhood. On-site signage would also include directional (wayfinding) signage, signage associated with the parks trails, and residential neighborhoods, and address signage on the residential units. All signage within the Project site would be governed by the regulations of the City's Sign Code. Separate Planning Commission approval of a Planned Sign Program would be required for all on-site signs.

3.5 CIRCULATION

Three locations would provide access to the Project Site: two entries at Bake Parkway and one entry at Rancho Parkway. The two entries at Bake Parkway would line up with the existing roads (Rancho Parkway South and Orchard Street), thereby improving connectivity in the Project's vicinity. The Project proposes to widen Bake Parkway at each of the Project site entries to provide northbound right-turn lanes. Southbound turn lanes would extend from Bake Parkway to the Project's main entry. No left turns would be allowed into the Project from the secondary entry on Bake Parkway. Rancho Parkway would provide access to the commercial center north of the Project site. Rancho Parkway would also be widened at the Project site entry to provide an eastbound right-turn lane and a westbound left-turn lane. Refer to Figure 3.10 for the Conceptual Circulation Plan.

The proposed internal circulation system consists of three collector streets that would connect to smaller neighborhood streets. Street medians and parkways (totaling 3.2 ac) are proposed along the collector roads. As shown on Figure 3.11, designated off-street bicycle and pedestrian paths would extend along the collector streets and the perimeter of Central Park. An off-street bicycle and pedestrian path would ultimately connect to the Serrano Creek Trail from the southeastern Project site boundary. Figure 3.11 also shows that Class II bikeways (on-street bicycle lanes) would be located on both sides of Bake Parkway, Rancho Parkway South, and Rancho Parkway, consistent with the Circulation Element of the City's General Plan.

Figure 3.12 shows that all of the Project's proposed collector and neighborhood streets would have sidewalks (minimum 8 ft) on both sides. Marked crosswalks would be provided where sidewalks would cross collector streets and at other key intersections. At the southeast corner of the Project site, a sidewalk connection would be provided from the Nakase Property to the existing Serrano Creek Trail.

The proposed Project would require the construction of roadway and access improvements on four currently undeveloped remnant parcels surrounding the Project site. Figure 3.13 illustrates the locations of the four remnant parcels that would be required for Project implementation.

3.5.1 Parking

The City's Municipal Code (Chapter 9.168, Off-Street Parking) stipulates parking requirements for residential uses; the Project would be subject to the City's parking requirements. On-street parking would be provided to serve the Neighborhood Parks and Central Park. On-street parking would be

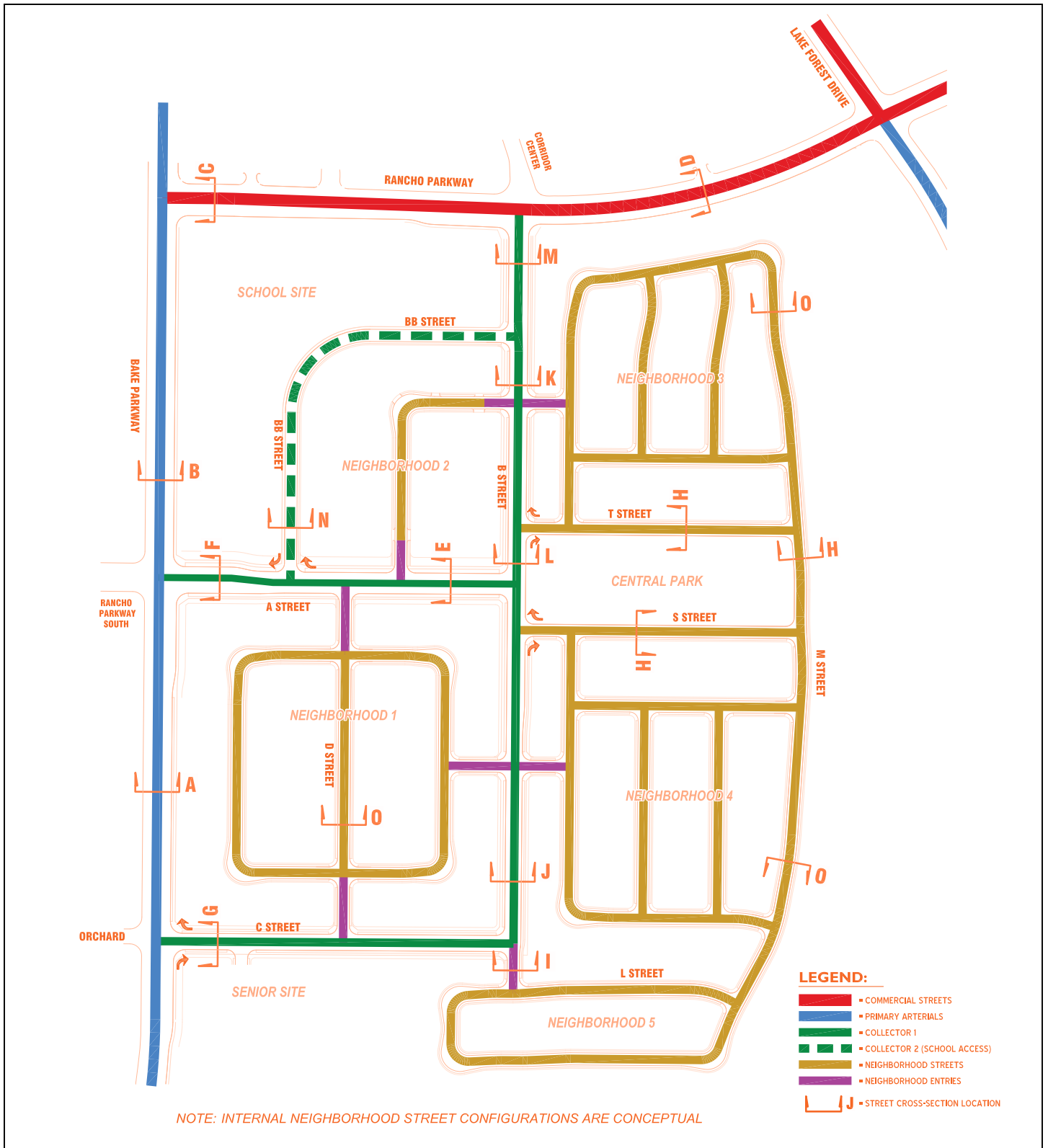


FIGURE 3.10

LSA



NO SCALE

SOURCE: Nakase Property Area Plan (March 2019)

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Nakase Nursery/Toll Brothers
Conceptual Circulation Plan

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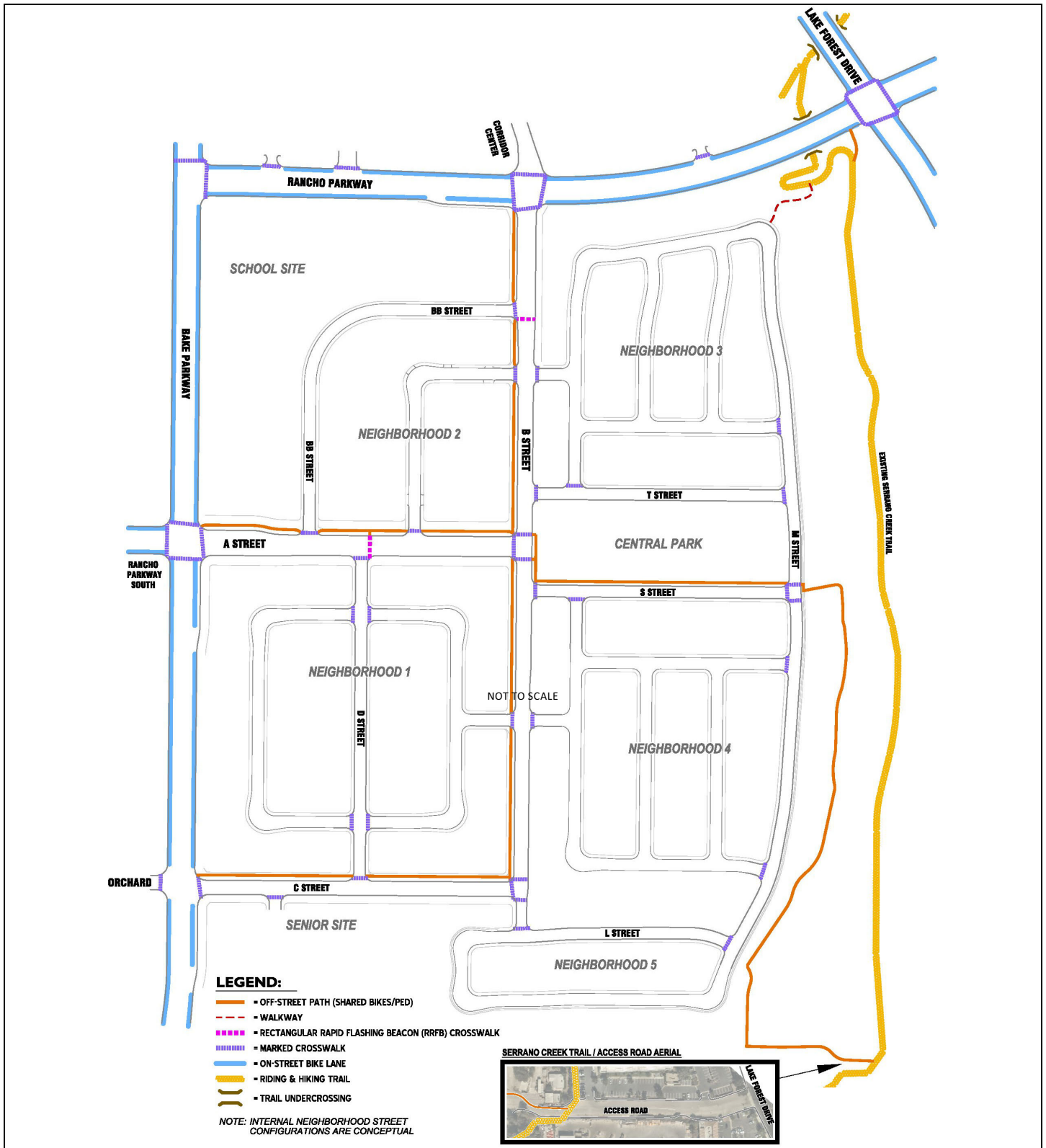


FIGURE 3.11

LSA



NO SCALE

SOURCE: Nakase Property Area Plan (June 2019)

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Nakase Nursery/Toll Brothers
Bicycle Lanes and Trail Facilities

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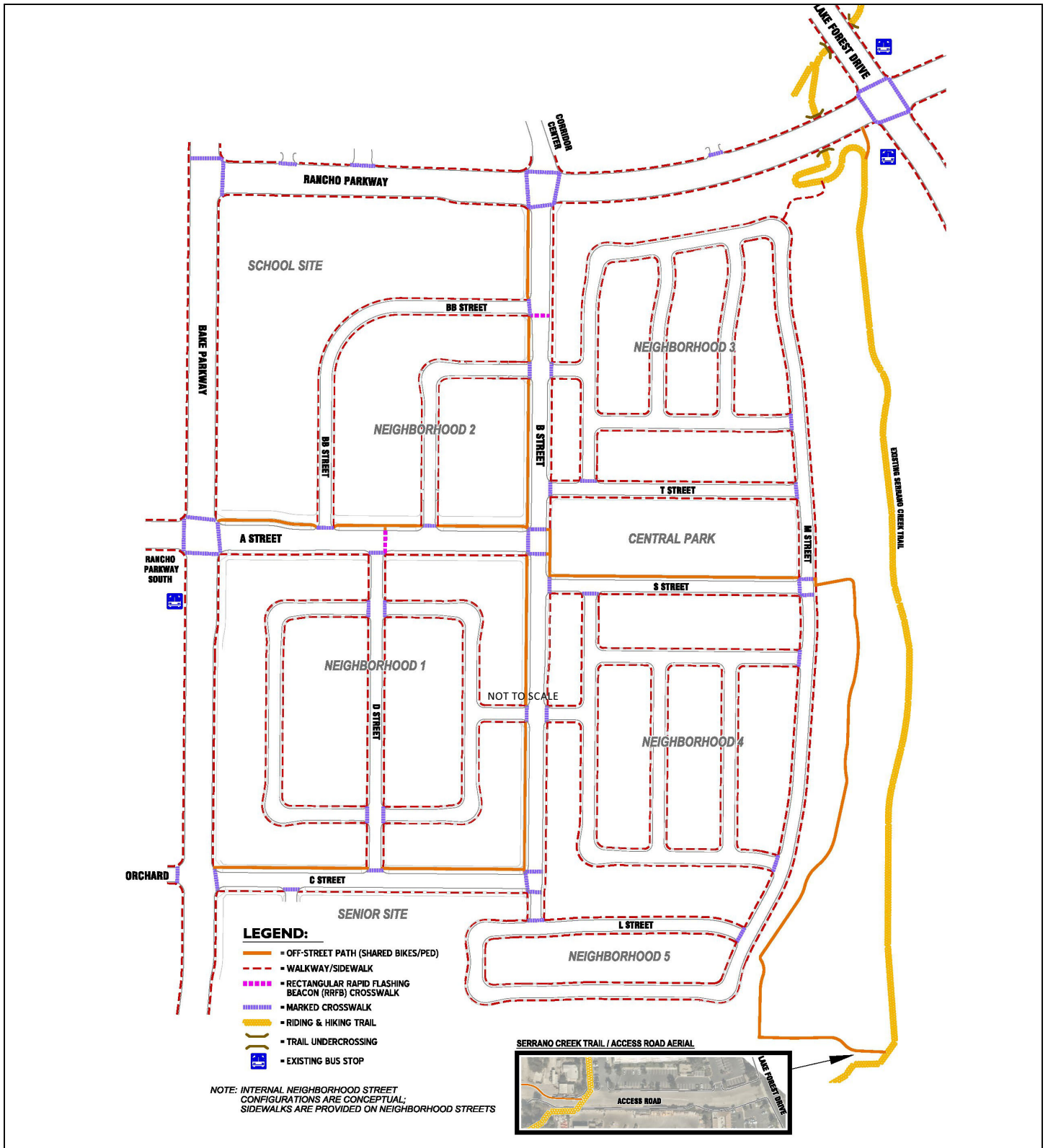


FIGURE 3.12

LSA



NO SCALE

SOURCE: Nakase Property Area Plan (June 2019)

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Nakase Nursery/Toll Brothers
Pedestrian Facilities

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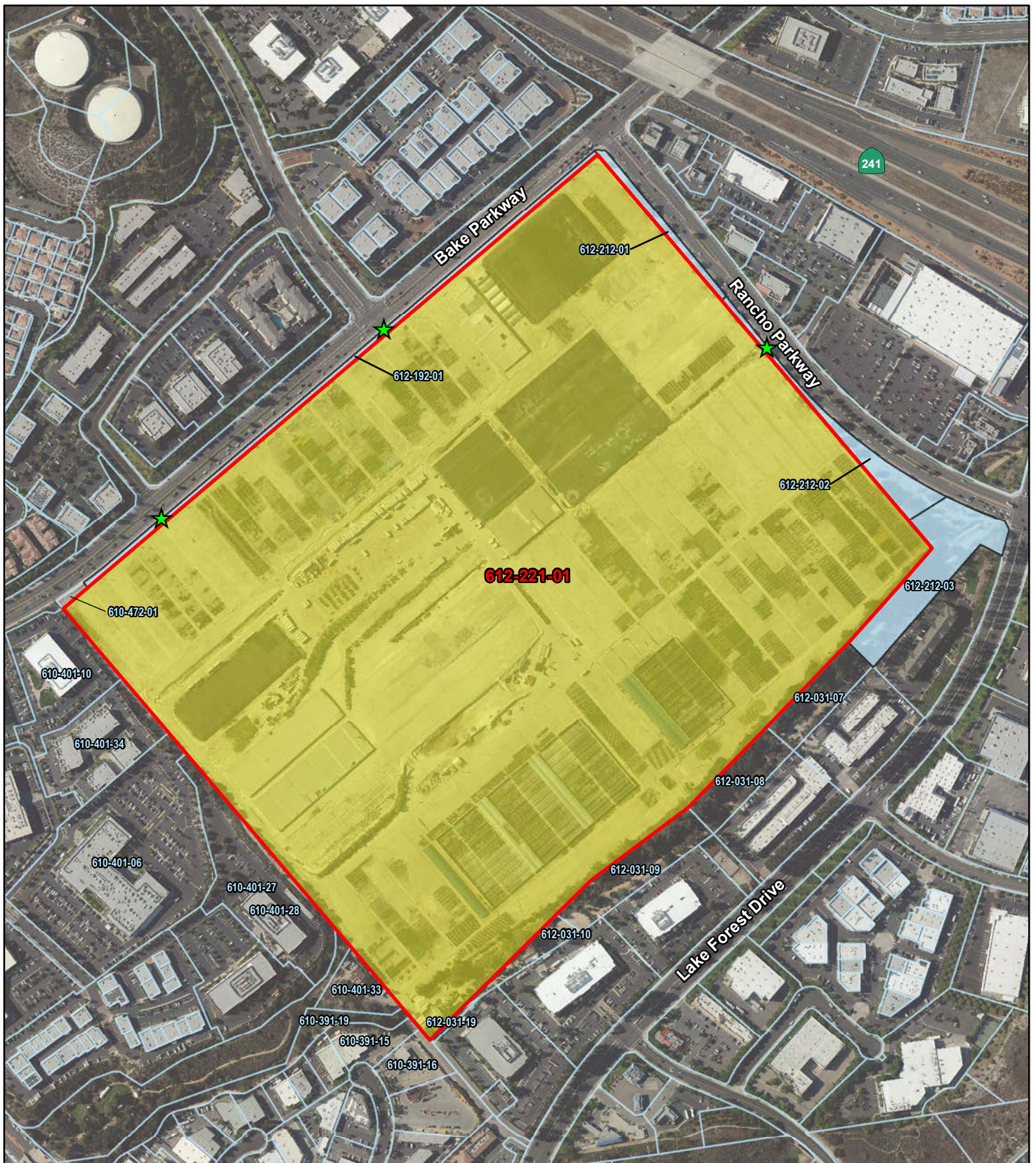
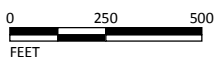


FIGURE 3.13

LSA

LEGEND

- Project Site (APN 612-221-01)
- Remnant Parcels Required for the Project
- Access Point
- Parcel Boundaries



SOURCE: Google Maps (2018)

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Nakase Nursery/Toll Brothers
Remnant Parcels Required for the Project

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permitted on a portion of only some residential streets, including a portion of “B” and “C” Streets, in accordance with an on-street parking exhibit to be submitted by the Applicant, and as permitted by the City’s Planning Commission upon approval of the Area Plan.

3.6 INFRASTRUCTURE IMPROVEMENTS

The following infrastructure improvements would serve the future development included in the Project:

- **Water:** The Project site receives domestic and recycled water service from the Irvine Ranch Water District (IRWD). An existing 24-inch domestic water main and an existing 12-inch recycled water main cross the Project site near its southern boundary. These existing water and recycled water mains would be relocated. Consequently, portions of the existing water line system would need to be rerouted to be aligned with the proposed circulation streets and lots. All rerouting of water facilities would be reviewed and approved by the City’s Public Works Department and the IRWD. There are 8-inch domestic water lines and reclaimed water lines that are proposed to be installed in each of the Project’s collector streets. These water lines would provide domestic water service and reclaimed water for landscaping for the Project’s various uses.
- **Water Well Abandonment:** There is an existing irrigation well located in the center portion of the Project site, which produces 300 gallons per minutes (gpm). In accordance with Section 15.04.020 of the City’s Municipal Code, the Project Applicant/Developer would be required to obtain a permit from the City for the proper decommissioning of the well in order to prevent the contamination of groundwater.
- **Sewer Service:** Sewer lines would be extended onto the Project site. A gravity sewer system would be installed and connected to the existing 21-inch sewer line in Bake Parkway. All connections to the existing wastewater lines would be reviewed and approved by the City’s Public Works Department and the Orange County Sanitation District, as applicable.
- **Utilities:** The Project site receives electricity service from SCE. The Project proposes to underground the existing overhead 66-kilovolt (kV) power lines that are currently located on the east side of Bake Parkway within an existing 20 ft wide SCE utility easement. All undergrounding would be done consistent with the requirements of SCE. The proposed Project includes gas, cable, and telephone utility lines.
- **Drainage System:** On-site stormwater runoff would flow into a proposed on-site storm drain system in “B” Street and then diverted to the subsurface detention vault below Central Park. The on-site underground detention facility would comprise a system of modular vault structures with a solid impermeable floor. This structure would be designed to hold approximately 621,000 cubic feet (cf) of stormwater. Flows would then be directed to the southwestern portion of the Project site to the existing 10.5 ft x 10.5 ft reinforced concrete box, then to the existing off-site storm drain system, and ultimately into Serrano Creek, approximately 0.6 mi to the southwest of the Project site. Off-site stormwater runoff from north of Rancho Parkway would be connected to the proposed on-site storm drain system in “B” Street via the existing 84-inch storm drain

system in Rancho Parkway, which would then connect to the same existing 10.5 ft x 10.5 ft reinforced concrete box as on-site stormwater runoff at the southwestern portion of the Project site. The proposed location of the underground detention vaults are shown on Figure 3.14.

- **Stormwater Best Management Practices (BMPs):** The proposed Project would include a subsurface detention vault below Central Park and the Neighborhood Park, underground detention vaults in combination with proprietary biotreatment BMPs at each of the mini-neighborhood parks, a bioretention facility along Serrano Creek, and a linear bioretention facility along "A" Street. The proposed stormwater treatment system is shown on Figure 3.14.

3.7 SUSTAINABILITY FEATURES

Future development facilitated by approval of the proposed Project would be consistent with the California Green Building Standards Code (CALGreen) and would include the following sustainability features:

- Increased insulation values in walls and attic spaces
- Installation of high-efficiency windows and doors
- Installation of heating, ventilation, and air conditioning (HVAC) systems with a high Seasonal Energy Efficiency Ratio (SEER)
- Specified use of Energy Star appliances
- Installation of water-efficient plumbing fixtures
- Installation of tankless water heater systems
- Installation of light-emitting diode (LED) technology within homes
- Use of recycled water for common area landscape irrigation
- Use of drought-tolerant plants in landscape design
- Installation of water-efficient irrigation systems with smart sensor controls
- Installation of a 240-volt circuit in each home to allow easy installation of electric vehicle (EV) charging
- Installation of EV charging stations at Central Park and the elementary school¹
- Installation of solar panels or solar-ready construction of residential structures to the extent required by CALGreen

¹ EV charging stations at the proposed elementary school would be subject to SVUSD construction standards.

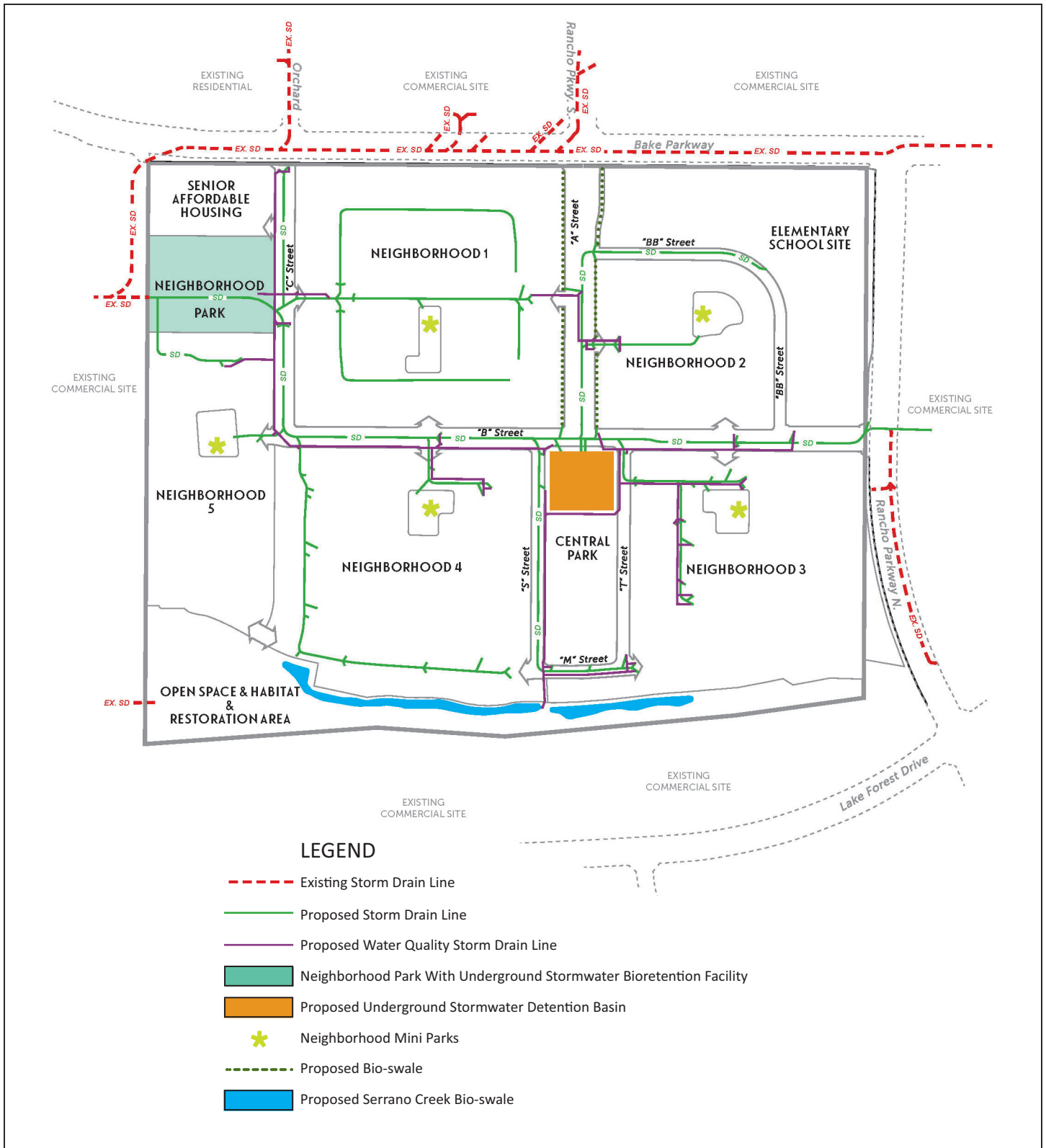
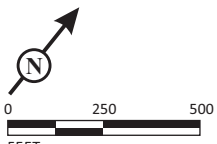


FIGURE 3.14

LSA



SOURCE: Nakase Property Area Plan (June 2019)

I:\CLF1801\G\Storm_Drain_Water.cdr (8/14/2019)

Nakase Nursery/Toll Brothers
Storm Drain System & Storm Water Treatment

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3.8 FIRE SAFETY

Fire engineering, code enforcement, and public education are the main components of fire prevention. The Orange County Fire Authority (OCFA) approved a conceptual Fire Master Plan (refer to Figure 4.19.1) in February 2018, a conceptual Fire Protection Plan with Ember Mitigation (refer to Figure 4.19.2) in January 2018, and a conceptual Fuel Modification Plan (refer to Figure 4.19.3) in March 2018. The Fire Master Plan and Fire Protection Plan address specific fire prevention and access elements required by the City of Lake Forest Municipal Code and the California Building Code (CBC). The Fire Master Plan establishes the proper location and adequacy of fire suppression facilities as well as fire access routes on the Project site. The Fire Master Plan also identifies the locations of fire hydrants, a water supply for firefighting, and emergency access to residences and structures on the Project site. According to OCFA, adherence to the elements of the Fire Master Plan is directly correlated with the effectiveness of first responders, including fire and emergency medical personnel.

The Fire Protection Plan identifies lots and structures that would be within the Ember Mitigation Zone and Radiant Heat Zone. It also identifies lots and structures that would require an attic fire sprinkler system and the conceptual location of the radiant heat wall (i.e., Community Theme Open View Glass Wall).

The Fuel Modification Plan is required by the City of Lake Forest Municipal Code. The Fuel Modification Plan requires the use of fire-resistant building materials, the construction of radiant heat walls, the selection of non-combustible plant species, and the establishment of setback areas and areas that would be permanently irrigated.

3.9 PROJECT CONSTRUCTION

3.9.1 Phasing and Staging

Development of the proposed Project would require excavation of the site; delivery of materials, equipment, and personnel; demolition of the 1,744-square-foot (sf) existing structure on the Project site; undergrounding of utilities; construction of the buildings; and installation of landscaping.

Demolition, grading, and building activities would involve the use of standard earthmoving equipment such as loaders, bulldozers, cranes and other related equipment. No blasting or pile driving is proposed. Construction worker vehicles would be parked on the Project site. It is anticipated that heavy equipment delivery would not occur on a daily basis, but rather periodically throughout the construction phase based on need.

In total, the proposed Project would require the demolition of approximately 2,848 tons of asphalt and 1,161 tons of concrete. The total amount of demolished material that is expected for the Project is 4,009 tons of debris. Hauling trips are based on the assumption that a truck can haul 20 tons (16 cubic yards [cy]) of material per load and assumes one haul truck that is importing material would also have a return trip. Therefore demolition is anticipated to require 401 hauling trips in order to remove 4,009 tons of debris. In addition, the proposed Project is expected require 150,000 cy of soil export. As such, the proposed Project is expected to generate 18,750 hauling trips

in order to export 150,000 cy of soil. Demolition debris export and soil export activities are not permitted during peak commute hours from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

Construction trips that would be generated on a daily basis throughout each phase of construction would be derived from construction workers and delivery of construction materials. It has been assumed that construction workers would arrive up to 30 minutes prior to the workday and would leave up to 30 minutes after the workday ends. It is anticipated that the majority of construction employees would arrive between 6:00 a.m. and 7:00 a.m., and depart between 3:30 p.m. and 4:30 p.m.

The proposed Project would be implemented over an estimated period of 67 months (approximately 5.5 years). Demolition and site preparation would span approximately 3 months, and grading would span approximately 12 months. Paving and infrastructure would take approximately 4 months and 12 months, respectively, and would occur concurrently. Building construction would be implemented over an estimated period of 46 months. Project build out is anticipated to occur in 2025.

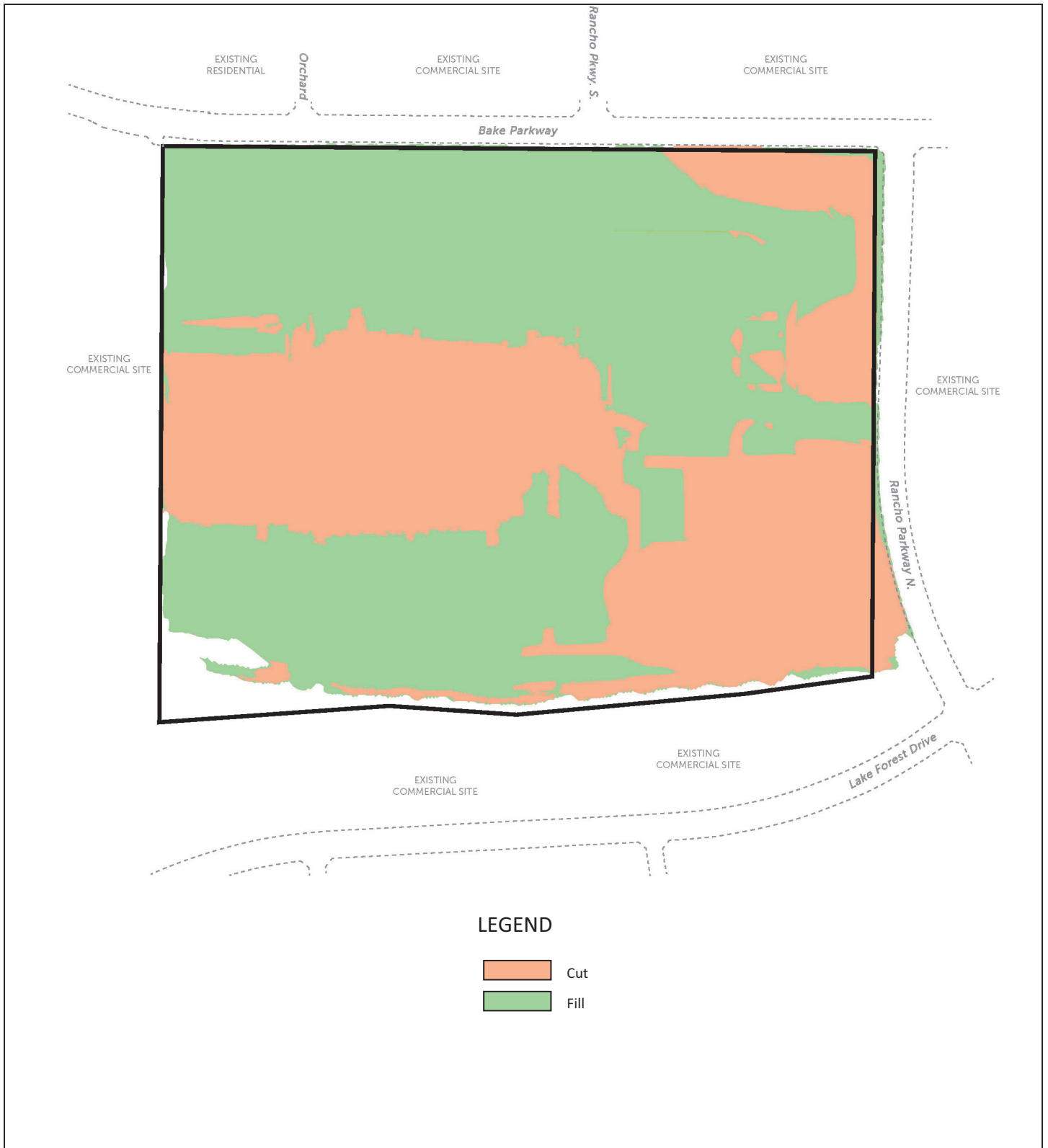
3.9.2 Grading and Earthwork

The grading operation is anticipated to involve a total amount of approximately 825,000 cy of cut-and-fill and approximately 1.8 million cy of remedial grading. In order to roughly balance soil on site, topographic highpoints on the site would be “cut” and the soil would be used to “fill” low points on the Project site. Areas of cut-and-fill are illustrated on Figure 3.15.

The Project site is located in a natural canyon area with adjoining topographic ridges. A majority of the former canyon areas are capped by a substantial volume of undocumented fill that resulted in creating a relatively flat working surface for the existing nursery. Remedial grading consists of removal of all of the undocumented fill and the upper portion of the slope wash and alluvium that is dry, porous, and relatively loose. The structural areas within the bedrock ridges would be over excavated and capped with compacted fill. The design cut slopes would be provided with stabilization fills to mitigate erosion potential of the friable sandstone. Along the Serrano Creek edge, a shear key would be constructed to reduce lateral earth movement during the design earthquake event.

The first phase of development consists of remedial grading to stabilize the site for development, grading and construction of backbone facilities. The entire site would be remedial graded to stabilize the site for development. Rough grading and infrastructure operations would be performed to support the backbone systems on Streets “A”, “B”, “C”, and “BB”. Improvements along Bake Parkway and Rancho Parkway would also be constructed within this phase.

Following the remedial grading step, the grading operation would continue with conventional grading. This grading is expected to utilize standard equipment and techniques to provide the cuts and fills necessary to implement the proposed Project. As discussed above, the Project is anticipated to require approximately 150,000 cy of export due to irregularities in the remedial shrinkage factors during grading as well as the uncertainties of the quantity of excess spoils generated from retaining walls, infrastructures, and homebuilding activities post-grading operation.

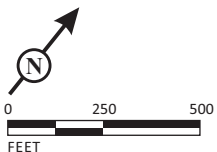


LEGEND

- Cut
- Fill

LSA

FIGURE 3.15



SOURCE: Nakase Property Area Plan (June 2019)

Nakase Nursery/Toll Brothers
Cut & Fill Map

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Development of in-tract infrastructure for neighborhoods and recreational amenities is anticipated to occur in multiple phases. Each of these phases includes construction of roadways and installation of underground utility and service infrastructure, as well as recreation amenities. The timing and sequence of the phasing may be adjusted based on market conditions.

3.10 PROJECT OBJECTIVES

The primary purpose of this project is to establish the Nakase Planned Community. The following project objectives have been established to aid decision-makers in their review of the proposed Project and its associated environmental impacts:

- Provide a comprehensive plan for development of the Nakase property that implements the goals and policies of the Lake Forest General Plan.
- Provide a site design that is sensitive to the existing natural features, including Serrano Creek.
- Provide a balanced mix of single-family and attached senior affordable homes, open space, and active public and private uses.
- Accommodate public uses by incorporating a new elementary school site that is conveniently located within easy walking distance of Project site residents.
- Provide an exceptional trail system and on-site parks that enhance the quality of life of the larger community.
- Reduce vehicular traffic and peak-hour trips through thoughtful site planning that emphasizes connectivity, access, and mobility.
- Provide for logical, attractive, and safe pedestrian and bicycle connections within the community.
- Create high-quality residential homes and distinct, identifiable neighborhoods with a range of specifically targeted single-family product types.

3.11 REQUIRED PERMITS AND APPROVALS

3.11.1 Discretionary Actions

Implementation of the proposed Project would require various approvals and permits from local, State, and federal agencies with jurisdiction over specific elements of the Project. The discretionary approvals by the City, as the Lead Agency, would include the following:

- **General Plan Amendment (GPA 05-17-5033):** The Project proposes to change the General Plan land use designation from Business Park to Low-Medium and Medium Density Residential, High-Density Residential, Public Facility, Neighborhood Parks, and Open Space.

- **Zone Change (ZC 05-17-5034):** The Project proposes to change the Project site's zoning classification from A1 – Agricultural District to Planned Community. Approval of the Planned Community Program would be required as part of the zone change.
- **Development Agreement:** A Development Agreement between the Applicant and the City would identify the terms for development of the Project site and would identify the Applicant's obligations associated with the proposed Project.
- **Vesting Tentative Tract Map:** A Vesting Tentative Tract Map would be required to subdivide the property.
- **Planned Sign Program:** Separate approval by the Planning Commission of a Planned Sign Program is required for Project identification signs.

Project approvals by the City are described in greater detail below.

3.11.1.1 General Plan Amendment and Zone Change

As previously stated, the Project Site is designated Business Park on the City's General Plan and is classified as A1 – Agricultural District on the City's Zoning Map. The current land use designation and zoning classification are inconsistent. To implement the Area Plan, the proposed Project would require approval of a GPA to change the General Plan land use designation of the property to Low-Medium and Medium Density Residential (Neighborhoods One through Five),¹ High Density Residential (senior affordable housing), Public Facility (elementary school site), Neighborhood Parks, and Open Space (habitat and restoration areas). A zone change would also be required to establish the Project Site's zoning classification as a Planned Community District. The zone change would require approval of the Area Plan, as well as the Nakase Property Supplemental Text and Development Plan.² The proposed land use designation and zoning classification would ensure consistency between the City of Lake Forest General Plan and Municipal Code concerning land use on the Project site. Approval of the Area Plan would be subject to approval of the GPA and Zone Change applications.

3.11.1.2 Planned Community Program

Chapter 9.112 of the City of Lake Forest Municipal Code requires that a Planned Community Program be developed for any project proposing a zone change to a Planned Community District. The Planned Community Program must address the entire Project site and would be subject to

¹ The Area Plan would allow for an alternative product type for Neighborhood Two. Under the proposed General Plan designation and Zoning district for Neighborhood Two, rowtowns may be developed at the higher end of the low-medium density range provided the maximum number of units specified in Table 2.1 of the Area Plan for Neighborhood Two is not exceeded and the maximum number of total units in the Area Plan does not exceed 675 units.

² The Nakase Property Supplemental Text and Development Plan would be considered equivalent to the planned community text, which is specified in Section 9.112.050 of the City of Lake Forest Municipal Code, as required under the Planned Community Program.

approval by the City's Planning Commission, as well as adoption by the City Council. The Planned Community Program should include the following components:

- Planned community text specifying permitted uses and site development standards applicable to the entire planned community area
- A statistical summary containing appropriate statistical information such as the minimum/maximum numbers associated with certain aspects of development proposed in the planned community (i.e., maximum number of dwelling units, minimum number of acres of open space)
- A planned community zoning map displaying the proposed uses, exterior boundaries, arterial highways, and any applicable overlay or combining districts within the planned community area
- A planned community development map displaying information such as the general location of infrastructure facilities and a detailed statistical table regulating land uses in each planned community planning area

The Area Plan generally serves as the Planned Community Program for the proposed Project and is intended to guide development and land uses for the planned community within the Project site. Upon adoption, the Area Plan would become a part of the City's Zoning Code. In addition, the planned community zoning map would be considered a component of the City's Zoning Map. Therefore, the Area Plan was developed to serve as the mechanism for implementation of the GPA and zone change required for the proposed use of the Project site.

3.11.1.3 Development Agreement

A Development Agreement is a legal contract negotiated between a project applicant and a public agency that governs the land uses and terms and conditions of approval that may be allowed for a particular project. A Development Agreement can also outline public benefits that the project proponent is guaranteeing to the public agency (e.g., additional fees, land dedications, or public facility improvements). The Project's Development Agreement would include obligations associated with the development of the Project Site related to phasing of land use, timing of infrastructure and public improvements, and provisions for infrastructure financing. The proposed Project includes approval of a Development Agreement.

3.11.1.4 Vesting Tentative Tract Map

A subdivision is the division of any unit or units of land for the purpose of sale, lease, or financing, and may be initiated via a Tentative Parcel Map or Tentative Tract Map. According to Section 7.03.030 of the City of Lake Forest Municipal Code, a Tentative Tract Map is a preliminary map prepared for the purpose of creating five or more lots containing five or more units. Because the Project would include five or more lots, the City would consider approval of a Tentative Tract Map. The Applicant has expressed a desire to pursue the approval of a Vesting Tentative Tract Map for the proposed Project. A Vesting Tentative Tract Map confers a vested right to proceed with development for a specified time after recordation. The Vesting Tentative Tract Map would be prepared in accordance with the Subdivision Map Act and the City's Subdivision Ordinance. The

Vesting Tentative Tract Map would be submitted separately from and concurrently reviewed with the Area Plan.

3.11.2 Other Discretionary City Actions

The Project will require various subsequent permits and approvals to implement the Area Plan as indicated in Section 9.3 of the Area Plan. Subsequent permit approvals would be discretionary and subject to Planning Commission review and approval, and others would be administrative and subject to review and approval by City Directors, including the Director of Community Development, Community Services, and/or Public Works. Included among the types of subsequent discretionary permits requiring Planning Commission review and approval would be:

- Area Plan Amendments, including transferring allowable units from one neighborhood to another providing the land use densities within neighborhoods are not exceeded, and the total number of dwelling units permits throughout the Project are not exceeded.
- Tentative Map Amendments
- Subsequent Tentative Maps
- Site Development Permits (Site Plans) for each new single-family neighborhood, and multi-family neighborhoods such as the Senior Affordable Housing
- Alternative Development Standards
- Gateway/Community Monuments/Signage
- Master Landscape and Walls Plan
- Model Home Signage

Included among the types of subsequent administrative permits requiring Director review and approval would be:

- Model Home Signage
- Final Park Plan Designs
- Park Recreation Centers

3.11.3 Other Ministerial City Actions

Ministerial permits/approvals (e.g., well decommissioning permit, grading permits, and building permits) would be issued by the City or other appropriate agencies to allow Project site preparation, curb cuts (if necessary), and connections to the utility infrastructure, dwelling units, paving, landscaping, walls and fences, and other Project features subject to ministerial permits, including construction drawings for parks and trails

3.11.4 Probable Future Actions by Responsible Agencies

Because the Project also involves approvals, permits, or authorization from other agencies, these agencies are "Responsible Agencies" under the California Environmental Quality Act (CEQA). Section

15381 of the *State CEQA Guidelines* defines Responsible Agencies as public agencies other than the Lead Agency that will have discretionary approval power over the Project or some component of the Project, including mitigation. These agencies include, but are not limited to, the agencies identified in Table 3.D.

Table 3.D: Probable Future Actions by Responsible Agencies

Responsible Agency	Action
Orange County Fire Authority (OCFA)	Approval of Fire Master Plan, Fire Protection Plan, and Fuel Modification Plan
State Water Resources Control Board (SWRCB)	Applicant/Developer must submit Permit Registration Documents, including a Notice of Intent, to comply with the National Pollutant Discharge Elimination System (NPDES) North Orange County Permit (Order No. R8-2009-030).
Irvine Ranch Water District (IRWD)	Approval of an Addendum to the Lake Forest Sub-Area Master Plan
California Department of Fish and Wildlife (CDFW)	Approval of Section 1602 Permit, a Habitat Mitigation Monitoring Plan (HMMP), and possibly a Bat Management Plan. Determination and possible mitigation related to the aquatic resource integrity area.
Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification and Issuance of Waste Discharge Requirements (WDRs).
United States Army Corps of Engineers (ACOE)	Approval of Section 404 Permit and an HMMP.
Saddleback Valley Unified School District (SVUSD)	Approval of Educational Specifications, site selection, acceptance of land dedication from the Applicant/Developer, allocation of design and construction funding, all contracts for design and construction activities, and execution of any required easements.
City of Lake Forest	Review and approval of conditional use permit, design plans, and site plans
California Department of Education, School Facilities Planning Division	Approval of construction plans and allocation of construction funding.
Division of the State Architect	Approval of construction plans and grading permit.

Source: Compiled by LSA Associates, Inc. (2019).

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

OVERVIEW OF ENVIRONMENTAL SETTING

The Nakase property (Project site) is located in the north-central portion of Lake Forest in Orange County, California. As shown on Figure 3.1, regional access to the Project site is provided by State Route 241 (SR-241), which is located approximately 0.07 mile (mi) northeast of the Project site, and Interstate 5 (I-5), which is located approximately 3.8 mi southwest of the Project site.

Historically, the Project site has been used primarily for agricultural production. From 1938 through the late 1960s, the Nakase Nursery was developed with orchards. In the late 1960s, the northwestern portion of the Project site continued operation as an orchard while the remainder of the Project site was developed as a plant nursery. In 1988, the orchards were removed, and the entire Project site has been used as an agricultural wholesale plant nursery since the 1990s. The 122-acre (ac) Project site (Assessor's Parcel Number [APN] 612-221-01) is currently operating as the Nakase Brothers Wholesale Nurseries.

The areas surrounding the Project site consist of a mix of land uses, including commercial, office, open space, industrial, and residential. The Project site is bounded on the northwest by Bake Parkway, on the northeast by Rancho Parkway, on the southeast by Serrano Creek and Serrano Creek Trail, and on the southwest by commercial, industrial, and office uses, with Dimension Drive beyond. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the Project site. As noted above, SR-241 is approximately 0.07 mi northeast of the Project site. Surrounding land uses are shown on Figure 3.3.

Residential planned communities in the vicinity of the Project site include the Foothill Ranch Planned Community (PC 8) to the north, the Portola Hills Planned Community (PC 9) to the northeast, the Baker Ranch Planned Community (PC 7) to the west, and the Rancho de Los Alisos Planned Community (PC 3) to the southeast.

The Project site is currently developed with multiple structures used for nursery operations, an office trailer, and a gravel parking lot that is used for trailer storage and staff parking near the center of the Project site. Figure 3.4 provides photographs of existing conditions on the Project site.

In the existing condition, there is one vehicular access point to the Project site via a non-exclusive easement over adjacent properties to the south. The easement extends from Lake Forest Drive, directly north of Dimension Drive, to the southernmost point of the Project site. Manufactured landscape slopes, chain-link fences, and block walls enclose the Project site. In addition, several mature trees line the northeastern and southeastern boundaries of the Project site.

CHAPTER FORMAT

This chapter contains 20 sections, and each section addresses one environmental topic listed in Appendix G of the Guidelines for the California Environmental Quality Act (State CEQA Guidelines) (California Code of Regulations [CCR] Title 14, Chapter 3, Section 1500–15397).

For each environmental impact issue analyzed, the Environmental Impact Report (EIR) includes a detailed explanation of the existing conditions, thresholds of significance that will be applied to determine whether the project’s impacts are significant or less than significant, analysis of the environmental impacts, and a determination of whether the project would have a significant impact if implemented. A “significant impact” or “significant effect” means “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora fauna, ambient noise, and object of aesthetic significance. An economic or social change by itself shall not be considered to be a significant effect on the environment.” (14 CCR Section 15382). Each environmental topic section in Chapter 4.0 also includes a discussion of the cumulative effects of the project when considered in combination with other projects, causing related impacts, as required by State CEQA Guidelines Section 15130.

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

- **Introduction** briefly describes the topics and issues covered in the section.
- **Scoping Process** briefly summarizes any relevant comments that were received during the scoping process.
- **Existing Environmental Setting** describes the relevant physical conditions that exist at the time of the issuance of the Initial Study/Notice of Preparation (IS/NOP) that may influence or affect the issue under investigation. This section focuses on physical site characteristics that are relevant to the environmental topic being analyzed.
- **Regulatory Setting** lists and discusses the laws, ordinances, regulations, plans, and policies that relate to the specific environmental topic and how they apply to the proposed Project.
- **Methodology** describes the approach and methods employed to complete the environmental analysis for the issue under investigation.
- **Thresholds of Significance** sets forth the thresholds that are the basis of the conclusions regarding significance, which are primarily the criteria in Appendix G to the State CEQA Guidelines and the City of Lake Forest (City) Initial Study/Environmental Checklist, City of Lake Forest CEQA Significance Thresholds Guide, General Plan, or Zoning Code.
- **Project Impacts** describes the potential environmental changes to the existing physical conditions that may occur if the proposed Project is implemented. Evidence is presented to show the cause-and-effect relationship between the proposed Project and potential changes in the environment. In accordance with State CEQA Guidelines Section 15126.2(a), this EIR is required to “identify and focus on the significant environmental effects” of the proposed

Project. The magnitude, duration, extent, frequency, and range or other parameters of a potential impact are ascertained to the extent feasible to determine whether impacts may be significant. In accordance with CEQA, potential project impacts, if any, are classified as follows for each of the environmental topics discussed in this EIR.

- **Significant and Unavoidable Impact:** If the proposed Project is approved with significant and unavoidable impacts, the decision-making body is required to adopt a statement of overriding considerations pursuant to State CEQA Guidelines Section 15093 explaining why the project benefits outweigh the unavoidable adverse environmental effects caused by those significant and unavoidable environmental impacts.
- **Less than Significant Impact with Mitigation Incorporated:** This classification refers to potentially significant environmental impacts that can be feasibly mitigated to a level of insignificance. If the proposed Project is approved, the decision-making body is required to make findings pursuant to State CEQA Guidelines Section 15091 that significant impacts have been mitigated to the extent feasible through implementation of mitigation measures.
- **Less than Significant Impact:** Less than significant impacts are environmental impacts that have been identified but are not potentially significant. No mitigation is required for less than significant impacts.
- **No Impact:** A “no impact” determination is made when the proposed Project is found to have no environmental impact.
- **Level of Significance Prior to Mitigation** summarizes the potentially significant impacts of the project, if any, prior to mitigation.
- **Mitigation Measures** are project-specific measures that avoid, minimize, rectify, reduce, eliminate, or compensate for a potentially significant impact.
 - **Regulatory Compliance Measures** may also be identified in this section. Regulatory Compliance Measures describe any relevant and applicable laws or regulations that must be adhered to with respect to the construction or operation of the proposed project and would reduce or lessen potential impacts related to a particular issue area.
- **Level of Significance after Mitigation** describes the significance of potential impacts after implementation of mitigation measures. Potential significant unavoidable impacts are clearly stated in this section.
- **Cumulative Impacts** refers to potential environmental changes to the existing physical conditions that may occur as a result of project implementation together with all other reasonably foreseeable, planned, and approved future projects in the vicinity of the project site that produce related impacts. State CEQA Guidelines Section 15355 defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts may result from

individually minor but collectively significant projects taking place over a period of time. Projects that have progressed to the stage where CEQA review has been initiated are normally treated as foreseeable probable future projects. For each of the environmental topics considered in this EIR, the geographic scope of the cumulative analysis is defined.

THRESHOLDS OF SIGNIFICANCE

The threshold questions used in this EIR are consistent with Appendix G of the *State CEQA Guidelines*, the City's *CEQA Significance Thresholds Guide* (March 2009), and the City's *Local CEQA Guidelines* (June 2019). In January 2018, the State Office of Planning and Research (OPR) submitted a proposal for comprehensive updates to the *State CEQA Guidelines* to the California Natural Resources Agency. Because those updates had not yet been approved when the Initial Study for the proposed Project was prepared and circulated in July 2018, the Initial Study relied on the threshold questions included in the City's *CEQA Significance Thresholds Guide* (March 2009) and the City's *Local CEQA Guidelines* that were in effect at that time.

On December 28, 2018, during preparation of this Draft EIR, the updated *State CEQA Guidelines* went into effect. On June 4, 2019, the Lake Forest City Council amended its *Local CEQA Guidelines* to be consistent with the updated *State CEQA Guidelines*. The updated *Local CEQA Guidelines* include revised thresholds related to several environmental topics. This EIR has been prepared in compliance with the updated *State CEQA Guidelines* and the current version of the City's *Local CEQA Guidelines*; therefore, the thresholds presented herein differ from the original thresholds utilized in the Initial Study prepared for the proposed Project.

RELATED PROJECTS

In accordance with State CEQA Guidelines Section 15130, cumulative impacts are anticipated impacts of the proposed project along with reasonably foreseeable growth. Reasonably foreseeable growth may be based on either:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- A summary of projections contained in the adopted General Plan or related planning document, or in a prior environmental document that has been adopted or certified, and that described or evaluated regional or areawide conditions contributing to the cumulative impact.

For the purposes of the EIR, a list of past, present, and probable future projects is used in the evaluation of potential cumulative impacts. All proposed, recently approved, under construction, and reasonably foreseeable projects that could produce a related or cumulative impact on the local environment when considered in conjunction with the proposed project are evaluated in an EIR. As stated above, an analysis of the cumulative impacts associated with these related projects and the proposed Project is provided in the cumulative impacts discussion under each individual impact category in Chapter 4.0.

In coordination with the City of Lake Forest and City of Irvine, a list of past, present, and probable future projects was developed. As shown in Table 4.A, the projects include various land uses, such as residential, commercial, office, and mixed-use. The locations of the related projects are shown on Figure 4.0.1. Although some projects on the list have been completed since issuance of the Notice of Preparation (NOP), they remain on the list because they are part of the cumulative analysis for the EIR.

It is noted that some of the related projects may not be completed by 2025 (the proposed Project's anticipated buildout year), may never be built, or may be approved and built at reduced densities. However, to provide a conservative forecast, the future baseline forecast assumes that all of the related projects will be fully built out by 2025.

The discussion of cumulative impacts "should be guided by the standards of practicality and reasonableness" (*Environmental Protection Info. Center v. Department of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 524). A proposal that has not crystallized to the point that it would be reasonable and practical to evaluate its cumulative impacts need not be treated as a probable future project (*City of Maywood v. Los Angeles Unified School District* (2012) 208 Cal.App.4th 362, 397). Rather, a potential future project qualifies for inclusion in an analysis of cumulative impacts only to the extent the future project is "both probable and sufficiently certain to allow for meaningful cumulative impact analysis" (*Id.* at 398; see *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 902 [when "review[ing] the agency's decision to include information in the cumulative impacts analysis[,] ... [w]e determine whether inclusion was reasonable and practical"]).

The Project Applicant/Developer started discussions with the City staff regarding the Nakase Project in 2017. Toll submitted the Nakase Project application and Area Plan before the City initiated the General Plan update process in January 2018, well before the City had developed scenarios to evaluate for purposes of the General Plan update process. Although the City is in the process of updating its General Plan, the City Council has directed staff to study numerous scenarios that vary widely, and the City Council has not selected a specific scenario. That is, the ultimate proposal for the General Plan update has not yet crystallized to the point where it would be reasonable and practical to evaluate its cumulative impacts. Thus, the potential, future General Plan update is not sufficiently certain or probable to be reasonably and practically analyzed as a probable future project. Further, a General Plan update is a broad planning document and not a discrete project that easily lends itself to a "list of projects" methodology for a cumulative impacts analysis — as is done in this EIR (as compared to a "summary-of-projects" methodology). Additionally, because new projects are continually being fed into the environmental review process, the City reasonable set a cutoff date for probable future projects at the time the Nakase Project application was submitted, well before the GPU was sufficiently certain (see *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1127 [lead agency has discretion to set the date of the project's application as the reasonable cutoff date for determining what other projects are pending and should be included in the cumulative impacts analysis]; and *San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61, 74 n.14 [lead agencies may set a reasonable cutoff date for the new projects that will be included in the analysis]). Thus, the potential future General Plan update is not included in this EIR as a probable future project.

Table 4.A: Summary of Related Projects

Project No.	Project Name	Location	Status	Project Description
City of Lake Forest				
1	SDP 07-18-5191	Serrano Summit Drive, South of Commercentre Drive	Submitted July 10, 2018. Under review.	Private Recreation Center for future Serrano Summit development, including clubhouse, shade structures, swimming pool/spa, pool cabana, event lawn and parking lot
2		NW Corner of Katella, 26672 Portola Parkway	Submitted September 13, 2018. Under Review.	Remodel of existing 44,736 sf commercial space, including façade, roof and interior modifications, along with minor site modifications
3	SDP 08-18-5212	Portola Center Northeast, Lots 1-93, Tract 17300, Amendment #2	Approved September 13, 2018. Appeal period to end on September 28, 2018.	A request to approve floor plans and architecture for 93 homes on previously approved lots
4	SDP 08-18-5199	22377 El Toro Road	Approved August 30, 2018. Appeal period to end on September 14, 2018.	To convert the interior of a previous 4,000 sf building (Chase Bank) into an animal hospital for Serrano Animal and Bird Hospital.
5	SDP 06-18-5176	1 Saddleback Parkway	Submitted June 12, 2018. Under review.	Construction of a new 92,391 sf worship center, repurposing of existing worship center including addition of a 26,924 sf second story for classroom use, and site improvements including 57 new parking spaces at Saddleback Church.
6	SDP 06-18-5172	South of Commercentre Drive, between Civic Center Drive and Serrano Summit Drive	Submitted June 5, 2018. Under review.	101 single-family homes in conjunction with Tentative Tract Map 18162 (Amara at Serrano Summit) in the previously approved Serrano Summit residential development.
7	SDP 06-18-5173	South of Commercentre Drive, between Civic Center Drive and Serrano Summit Drive	Submitted June 5, 2018. Under review.	108 townhome condominium homes in duplex configuration, in conjunction with Tentative Tract Map 18162 (Soria at Serrano Summit) in the previously approved Serrano Summit residential development.
8	SDP 04-18-5156	Tract 15594 – North of Trabuco Road, east of Bake Parkway, at the northern end of Peachwood	Planning Commission recommended approval of the project to the City Council at the September 13, 2018 Planning Commission meeting. City Council review tentatively scheduled for October 16, 2018.	An amendment to Site Development Permit 2008-11, for 85 single-family detached homes in Tract 15594, the Teresina Development (previously Pinnacle at Serrano Highlands).
9	SDP 02-18- 5120/ UP 08- 18-5203/ PSP 02-18-5123/ PSP 08-18-5123	22441 El Toro Road	Submitted on February 8, 2018. Under review.	Construction of a new 1,710 sf drive-through restaurant (Coffee Bean & Tea Leaf) in an existing shopping center. The project also includes a request to open at 4:00 a.m., a planned sign program for the drive-through signage and amendment to the Planned Sign Program 2010-02 to modify the wall sign regulations and allow an additional monument sign.
10	TTM 18162	South of Commercentre Drive, between Biscayne Bay Drive and Indian Ocean Drive	Submitted May 4, 2018. Under Review.	A request to further subdivide a previously approved residential development (Tentative Tract Map 17331) into a 114 lot subdivision for 521 attached condominium and detached single-family homes on 42.7 acres (Serrano Summit).

Table 4.A: Summary of Related Projects

Project No.	Project Name	Location	Status	Project Description
11	GPA 03-18- 5133/ ZC 03-18-5134/ TPM 03-18-5135/ SDP 03-18-5137	23061 and 23071 El Toro Road	Submitted on March 7, 2018. Under Review.	A General Plan Amendment to change the General Plan designation from Transportation Corridor to Public Facility; a zone change to change the zoning of the property from General Agriculture (A-1) to Community Commercial; a Tentative Parcel Map to subdivide the parcel into two separate parcels; a Site Development Permit for the construction of two 3,312 sf, single-story buildings, which will be used for religious purposes. The project includes grading, landscaping, and a parking lot with 140 parking stalls.

NW = northwest
 sf = square feet

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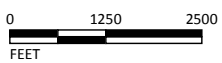


FIGURE 4.0.1

LSA

LEGEND

- Project Location
- Related Projects



SOURCE: Google Maps (2018)

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Nakase Nursery/Toll Brothers
Related Projects

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4.1 AESTHETICS

This section evaluates the existing visual and aesthetic resources on the Project site and in the surrounding area, and evaluates the potential for changes in aesthetic character that could result from implementation of the proposed Nakase Nursery/Toll Brothers Project (Project). This section also evaluates the potential loss of existing visual resources, effects on public views, visual compatibility with existing uses, and light and glare impacts.

Information presented in this section is based on photographs of the Project site taken during field surveys and site visits; the *Nakase Property Area Plan Visual Analysis* (Visual Analysis) (Kimley Horn 2019), which is provided in Appendix M of this Environmental Impact Report (EIR) and includes renderings of future development plans; and the City of Lake Forest (City) General Plan Land Use Element (1994b, revised 2016).

4.1.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. One comment letter included comments related to Aesthetics.

The letter from Southern California Edison (SCE) (August 14, 2018) suggested that the EIR include an analysis of the aesthetics impacts associated with Project-related utility work.

4.1.2 Existing Environmental Setting

The 122-acre (ac) Project site is currently operating as an agricultural wholesale plant nursery. The Project site is developed with multiple structures used for nursery operations, an office trailer, and a gravel parking lot near the center of the Project site that is used for trailer storage and staff parking (refer to Figure 3.4 in Chapter 3.0, Project Description, for photographs of existing conditions on the Project site).

The areas surrounding the Project site consist of a mix of land uses, including commercial, office, open space, industrial, and residential uses. The Project site is bounded on the northwest by Bake Parkway, on the northeast by Rancho Parkway, on the southeast by the Serrano Creek Trail, and on the southwest by commercial, industrial, and office uses, with Dimension Drive beyond. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the Project site. State Route 241 (SR-241) is approximately 405 feet (ft) north of the Project site.

Residential planned communities in the vicinity of the Project Site include the Foothill Ranch Planned Community (PC 8) to the north, the Portola Hills Planned Community (PC 9) to the northeast, the Baker Ranch Planned Community (PC 7) to the west, and the Rancho de Los Alisos Planned Community (PC 3) to the southeast.

According to the United States Census Bureau, the City of Lake Forest is located within the Mission Viejo-Lake Forest-San Clemente, CA Urbanized Area,¹ which also includes the Cities of Aliso Viejo, Dana Point, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Mission Viejo, Rancho Santa Margarita, San Clemente, and San Juan Capistrano, and the unincorporated communities of Coto de Caza, Ladera Ranch, and Las Flores. As described in *State CEQA Guidelines* Section 15387 and defined by the United States Census Bureau, an “urbanized area” is a central city or a group of contiguous cities with a population of 50,000 or more people, together with adjacent densely populated areas having a population density of at least 1,000 people per square mile.² Because the City is located in an urbanized area, the Project site is also located within an urbanized area.

The Project site is designated Business Park on the City’s General Plan and is classified as General Agriculture (A-1) on the City’s Zoning Map. According to Section 9.72.010 of the City’s Zoning Code, the A-1 district may be used as an interim zone in those areas that the General Plan may designate for more intensive urban uses in the future.

4.1.3 Regulatory Setting

4.1.3.1 Federal Regulations

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

4.1.3.2 State Regulations

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

As described further below (Threshold 4.1.1), no officially designated Scenic Highways are located in the vicinity of the Project site.

4.1.3.3 Regional Regulations

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

4.1.3.4 Local Regulations

City of Lake Forest General Plan Land Use Element. The City of Lake Forest General Plan is intended to guide future growth and development within the City and is comprised of several elements. The

¹ United States Census Bureau. Mission Viejo-Lake Forest-San Clemente, CA Urbanized Area No. 57709. Website: https://www2.census.gov/geo/maps/dc10map/UAUC_RefMap/ua/ua57709_mission_viejo--lake_forest--san_clemente_ca/DC10UA57709.pdf (accessed March 14, 2019).

² United States Census Bureau. 2010 Census Urban Area FAQs. Website: <https://www.census.gov/geo/reference/ua/uafaq.html> (accessed March 14, 2019).

Land Use Element addresses land use planning in the City and provides a framework for the issues examined in the other General Plan elements. Goals and policies related to aesthetics are intended to enhance the City's image and identity and create a sense of community.

The following goals and policies applicable to the proposed Project and related to aesthetics and scenic quality are presented in the Land Use Element:

Goal 2.0: A distinct image and identity for Lake Forest.

Policy 2.1: Enhance the physical attributes of Lake Forest to create an identifiable and distinct community within Orange County.

Policy 2.2: Promote high quality in the design of all public and private development projects.

Goal 3.0: New development that is compatible with the community.

Policy 3.1: Ensure that new development fits within the existing setting and is compatible with the physical characteristics of available land, surrounding land uses, and public infrastructure availability.

Policy 3.2: Preserve and enhance the quality of Lake Forest residential neighborhoods by avoiding or abating the intrusion of disruptive, non-conforming buildings and uses.

Policy 3.4: Blend residential and nonresidential development with landscaping and architectural design techniques to achieve visual compatibility.

Lake Forest Municipal Code. The Lake Forest Municipal Code includes regulations related to zoning and lighting that are applicable to the proposed Project and related to aesthetics and scenic quality.

Zoning. Title 9, Planning and Zoning, of the Lake Forest Municipal Code includes provisions and regulations for planned development projects within the City. Chapter 9.112 requires that a Planned Community Program be developed for any project proposing a zone change to a Planned Community District. The proposed Nakase Property Area Plan (Woodley Architectural Group 2019) generally serves as the Planned Community Program for the Project and is intended to guide development and land uses for the planned community within the Project site. Upon adoption, the Area Plan would become a part of the City's Zoning Code and an additional planned community—the Nakase Planned Community. In addition, the Proposed Zoning Map for the Project site included in the Area Plan would be considered a component of the City's Zoning Map.

Lighting. The Lake Forest Municipal Code requires that street lighting along local streets be provided at illumination levels specified in plans that have been approved by the City Engineer.

Additionally, the Lake Forest Municipal Code requires that all lights shall be designed and located so that direct light rays are confined to the site. Such regulations prevent direct views of light sources and reduce the potential for glare during the day.

Citywide Design Guidelines. The *Citywide Design Guidelines* are intended to supplement the goals and policies set forth in the City's General Plan Land Use Element and the development standards in the City's Municipal Code. The design guidelines are intended to guide proposed development so that it is aesthetically pleasing, high quality, and reflective of the character of the surrounding community. The *Citywide Design Guidelines* are general in nature and provide examples of the expected level of design of development within the City. For example, the design guidelines provide direction on issues not typically covered by the development standards (e.g., building orientation, architectural styles, and building materials). Individual design guidelines should be viewed as qualitative rather than mandatory development standards, provided the project design meets or exceeds the intent of the guidelines.

The *Citywide Design Guidelines* do not apply to areas within the City that are subject to their respective design guidelines. Therefore, the *Citywide Design Guidelines* do not apply to the proposed Project because the Area Plan includes design guidelines that would be approved as part of the Project.

Nakase Area Plan Design Guidelines. The Area Plan includes design guidelines related to architectural and landscape design that would be approved as part of Project implementation. The Area Plan design guidelines are summarized below.

Architectural Design Guidelines. Chapter 7.4 of the Area Plan includes the following architectural design guidelines related to site planning, building form and massing, and building appearance:

- **Site Planning (All Neighborhoods):**
 - If the mechanical equipment is visible from public view, screen the equipment with the use of walls, fences, or landscaping compatible with the building architecture.
 - Encourage variation in architectural styles, front and side yard elevations, setbacks, building massing and variety and reversal of floor plans, where feasible, along residential streets.
 - Maximize view potential using building orientation and maintain privacy for residential buildings adjacent to natural open space and recreation areas with the use of landscaping and fencing.
- **Neighborhood Site Planning:**
 - **Streetscape Variety:** Encourage variety in architectural styles, front and active side elevations, setbacks, massing, and roof forms to create a pleasing streetscape and community experience.

- **Corner Lots:** Special consideration shall be given to highly visible lots through architectural enhancements (cantilevered elements, plane breaks, or special elevation treatments), and enhanced landscaping.
- **Floor Plan & Style Plotting:** Each single-family neighborhood shall provide a minimum of three (3) floor plans (not including reversed plans), and three (3) distinctly different elevations for each floor plan. Elevation designs shall be congruent with the styles as depicted herein. The same floor plan and elevation and color scheme shall not be permitted to occur directly across or on either side of a given home.
- **Color Criteria:** A minimum of three (3) different color schemes for each elevation style shall be provided for each neighborhood. Schemes containing similar body colors shall not be allowed on homes directly across from one another or on either side of a given home.
- **Single-Family Waste Management:** Space shall be provided within a garage or side yards for three (3) recycling/waste containers. Space shall be identified on plans.
- **Building Form and Massing:**
 - Organize the overall massing of each building unit to avoid the building appearing as a mixture of unrelated forms.
 - Set back certain parts of the second-story front elevation plate lines from first-story elevations to help break up monolithic building masses.
 - Residential areas oriented toward pedestrian activity should be designed at a "human scale".
 - To promote building articulation when a third-story option is offered, third floors in Neighborhoods 1 through 4 shall only cover a percentage of the floor below per Table 7.1. Additionally, at least two of the third-floor façades must also exhibit increased setbacks from the property line (also per Table 7.1).
- **Building Appearance:**
 - Roof forms, windows, entries and doors shall aesthetically complement each other and reflect the architectural style of the building.
 - Second-floor and third-floors decks and balconies are encouraged to provide outdoor living spaces and to open up to views.
 - Design gutters and downspouts as continuous architectural features that fit with the building's architectural style and match the surface or accent color of the building.

- Design all appurtenant structures (e.g., covered entries, balconies, patio covers, and similar) to be consistent with the primary structure.

Community Walls and Fence Design Guidelines. Chapter 7.6 of the Area Plan includes the following design guidelines related to community walls and fences:

- Walls are to be of a material, matching color, and surfacing consistent with any adjoining wall material.
- Landscaping (e.g., trees, shrubs or evergreen vines) should be used to soften the appearance of the walls according to the landscape plan.
- Combined solid fencing or walls, walks, and open fencing may be used to create interest. Masonry walls are required only where necessary for noise attenuation or soil retention.
- Walls used as rear or side yard walls should be constructed up to 6 ft in height, but may be higher if required for privacy or sloped condition with a Site Development Permit approval.
- Solid walls should be used to mitigate adverse noise impacts on residential units.
- A variance in wall maximum height up to 20 percent can be approved by the Planning Director.

Elementary School Design Guidelines. Chapter 7.8 of the Area Plan includes the following design guidelines related to the proposed elementary school:

- Curbs or raised planters shall be provided in all parking lot areas adjacent to sidewalks, streets or buildings so that car bumpers do not overhang the pedestrian travel way or strike the building.
- Service structures for commercial docking shall be located to the rear of buildings whenever possible.
- When parking is located adjacent to a public street, landscape buffering shall be used to screen views of parked cars.
- Plants used as screening shall be a compact, evergreen type with a minimum screening height of 36 inches (36”) and a minimum width of 2 ft (2’) at maturity.
- School sport fields will not be lit.

Senior Affordable Housing Design Guidelines. Chapter 7.9 of the Area Plan includes the following design guidelines related to the proposed senior affordable housing:

- Curbs or raised planters shall be provided in all parking lot areas adjacent to sidewalks, streets or buildings so that car bumpers do not overhang the pedestrian travel way or strike the building.
- Service structures for commercial docking shall be located to the rear of buildings whenever possible.
- When parking is located adjacent to a public street, landscape buffering shall be used to screen views of parked cars.
- Plants used as screening shall be a compact, evergreen type with a minimum screening height of 36 inches (36”) and a minimum width of 2 ft (2’) at maturity.

Landscape Design Guidelines. Chapter 8 of the Area Plan includes design guidelines related to landscaping. The guidelines include illustrative landscape sections, conceptual landscape areas, and plant palettes demonstrating spacing, the general location, and suggested types of plant materials to be implemented on the Project site. The plant palettes include a variety of trees, shrubs, ground cover, and vines.

4.1.4 Methodology

4.1.4.1 Key Concepts and Terminology

The concepts and terminology used in this analysis are described below.

- **Scenic Resources:** Scenic resources are defined as natural or man-made elements that contribute to an area’s scenic value and are visually pleasing. Scenic resources include landforms, vegetation, water, or adjacent scenery and may include a cultural modification to the natural environment. The degree to which these resources are present in a community is clearly subject to personal and cultural interpretation. However, it is possible to qualify certain resources as having aesthetic characteristics and establish general guidelines for assessing the aesthetic impacts of new development.
- **Scenic Vista:** A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the public’s benefit. It is usually viewed from some distance away. Aesthetic components of a scenic vista include (1) scenic quality, (2) sensitivity level, and (3) view access. A scenic vista can be impacted in two ways; a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or “vista” of the scenic resource. Important factors in determining whether a proposed project would block scenic vistas include the project’s proposed height, mass, and location relative to surrounding land uses and travel corridors.
- **Sensitive View:** Sensitive views are generally those associated with designated vantage points and public recreational uses, but the term can be more broadly applied to encompass any valued public vantage point. Sensitivity level has to do with the (1) intensity of use of a visual resource; (2) visibility of a visual resource; and (3) importance of the visual resource to users.

- **Scenic Corridors:** Scenic corridors are channels that facilitate movement (primarily by automobile, transit, bicycle, or foot) from one location to another with expansive views of natural landscapes and/or visually attractive man-made development. Scenic corridors analyzed under the California Environmental Quality Act (CEQA) typically include State-designated Scenic Highways and locally designated scenic routes.
- **Scenic Quality:** The scenic quality of a streetscape, building, group of buildings, or other man-made or natural feature creates an overall impression of an area within an urban context. For example, a scenic vista along the boundary of a community, a pleasing streetscape with trees, and well-kept residences and yards are scenic resources that create a pleasing impression of an area. In general, concepts of scenic quality can be organized around four basic elements: (1) site utilization, (2) buildings and structures, (3) landscaping, and (4) signage. Adverse scenic quality effects can include the loss of aesthetic features or the introduction of contrasting features that could contribute to a decline in overall scenic quality.
- **Glare:** Glare is identified as a continuous or periodic intense light that may cause eye discomfort or be temporarily blinding to humans.
- **Light Source:** A device that produces illumination, including incandescent bulbs, fluorescent and neon tubes, halogen and other vapor lamps, and reflecting surfaces or refractors incorporated into a lighting fixture are considered to be light sources. Any translucent enclosure of a light source is considered to be part of the light source.

The impact analysis focuses on aesthetic-related changes to the Project site and surrounding area that may result from the approval of the proposed Project. This would include changes in vistas and viewsheds where visual changes would be evident, potential conflicts with applicable zoning and other regulations governing scenic quality, changes to scenic resources along designated scenic roads, and the introduction of new sources of light and glare.

The viewshed impact analysis evaluates project impacts from three viewing distance zones, as explained below.

- **Foreground Views:** These views include elements that are seen at a close distance and that dominate the entire view. These vantage points are generally 500 ft or less from the Project site, surrounding topography, and other prominent physical features in the project vicinity.
- **Middle-Ground Views:** These views include elements that are seen at a moderate distance and that partially dominate the view. These vantage points are generally located between 500 ft and 1 mile (mi) from the Project site.
- **Background Views:** These views include elements that are seen at a long distance and typically comprise horizon-line views that are part of the overall visual composition of the area. These vantage points are generally farther than 1 mi from the Project site.

Light and Glare. The analysis of light and glare identifies the location of light-sensitive land uses and describes the existing ambient conditions on and in the vicinity of the Project site. The analysis describes the proposed Project's light and glare sources and the extent to which Project lighting, including any potential illuminated signage, would spill off the Project site onto adjacent light-sensitive areas. The analysis also describes the affected street frontages, the direction in which the light would be focused, and the extent to which the proposed Project would illuminate sensitive land uses. The analysis also considers the potential for sunlight to reflect off of windows and building surfaces (glare) and the extent to which such glare would interfere with the operation of motor vehicles, aviation, or other activities. Glare can also be produced during evening and night-time hours by artificial light sources, such as illuminated signage and vehicle headlights. Glare-sensitive uses generally include residences and transportation corridors (i.e., roadways).

Shade/Shadow. Prolonged periods of shade and shadowing have the potential to negatively affect the character of certain land uses. Shadow-sensitive uses include routinely used outdoor spaces associated with residential, recreational, or institutional land uses; commercial uses (e.g., pedestrian-oriented outdoor spaces or restaurants with outdoor seating areas); nurseries; and existing solar collectors/panels.

4.1.4.2 Approach

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

Figure 4.1.1 illustrates the vantage point from which each key view photograph was taken and illustrates the representative view from that location. Figures 4.1.2(a) through 4.1.2(d) respectively illustrate each of the four key views selected for this analysis. The Project Renderings are conceptual representations of scale, mass, and proportion of future development allowable under the proposed Project.

Additionally, visual impacts have been evaluated based on the Project's consistency with goals and policies established in the Land Use Element (1994b, revised 2016) of the City's General Plan and development standards related to aesthetics in the City's Municipal Code.

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FIGURE 4.1.1

LSA

LEGEND

← 1 - Key View Location



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Existing Condition - View from State Route 241 looking south.



Project Rendering - View from State Route 241 looking south.

LSA

FIGURE 4.1.2(a)

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Existing Condition - View from intersection of Rancho Parkway South and Bake Parkway looking south.



Project Rendering - View from intersection of Rancho Parkway South and Bake Parkway looking south.

LSA

FIGURE 4.1.2(b)

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Existing Condition - View from Bake Parkway looking northeast.



Project Rendering - View from Bake Parkway looking northeast.

LSA

FIGURE 4.1.2(c)

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Existing Condition - View from Serrano Creek Trail looking northwest.



Project Rendering - View from Serrano Creek Trail looking northwest.

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4.1.5 Thresholds of Significance

The thresholds for aesthetics impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Local Guidelines for Implementing the California Environmental Quality Act (Local CEQA Guidelines)* (April 2017; updated June 2019). In January 2018, the State Office of Planning and Research (OPR) submitted a proposal for comprehensive updates to the *State CEQA Guidelines* to the California Natural Resources Agency. On December 28, 2018, during preparation of this EIR, the updated *State CEQA Guidelines* went into effect. On June 4, 2019, the Lake Forest City Council amended its *Local CEQA Guidelines* to be consistent with the updated *State CEQA Guidelines*. Among other revisions, the updated *Local CEQA Guidelines* includes revised thresholds related to aesthetics. This EIR has been prepared in compliance with the updated *State CEQA Guidelines* and the current version of the City's *Local CEQA Guideline*; therefore, the thresholds presented herein differ from the original thresholds utilized in the Initial Study prepared for the proposed Project (which is provided in Appendix A).

The proposed Project may be deemed to have a significant impact with respect to aesthetics if it would:

- Threshold 4.1.1: Have a substantial adverse effect on a scenic vista.**
- Threshold 4.1.2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.**
- Threshold 4.1.3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.**
- Threshold 4.1.4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

4.1.6 Project Impacts

Threshold 4.1.1: Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The Project site is located in a fully developed area (with the exception of the Project site) in the northern portion of Lake Forest in Orange County, California. The Project site is located approximately 10 mi northeast of the Pacific Ocean, although the ocean cannot be seen from the Project site due to the San Joaquin Hills to the southwest of the city. The Santa Ana Mountains, which are the highest and most prominent mountains in Orange County, are visible from the Project site and surrounding area. The Serrano Creek Trail is adjacent to the Project site along the southeastern boundary and is considered an Open Space/Recreation Resource according to the City's Recreation and Resources Element. In addition, Nature Park is located adjacent to the southwest boundary of the Project site. According to the City's Recreation and Resources Element, Nature Park is a 4.5 ac park with walking trails, picnic tables, and a gazebo picnic area. The

Recreation and Resources Element notes that natural resources and open space contribute to the visual quality of the City. Upon Project implementation, views from Serrano Creek Trail, Nature Park, and the Santa Ana Mountains may be obstructed from some vantage points. As a result, the proposed Project has the potential to damage scenic resources, including views from public parks. Therefore, a key view analysis is provided below.

Key View Analysis. Figures 4.1.2(a) through 4.1.2(d), Key Views 1 through 4, respectively, illustrate each of the four key views selected for this analysis. The City identified the Key Views as the most representative views at which the Project site is visible from public locations. To determine impacts related to aesthetics, the Existing Conditions views are compared to Project Renderings. The Project Renderings are illustrative of typical development that is projected to occur upon Project implementation and are representative of the scale, mass, and proportion of future Project development. The following discussion describes the four key views in their existing and post-Project condition in order to analyze impacts associated with Project implementation.

Key View 1. As shown on Figure 4.1.2(a), Key View 1 depicts the view of the Project site from the southbound lanes of SR-241, just west of Bake Parkway, looking south. Key View 1 represents the view of the northern portion of the Project site as seen by motorists traveling southbound on SR-241 as it passes over Bake Parkway.

Existing Conditions. In the foreground and middle ground is Bake Parkway, which traverses north to south, as well as the signalized intersection of Bake Parkway and Rancho Parkway. Bake Parkway is a four-lane roadway with two lanes in each direction and includes a raised median. In the foreground of the Existing Conditions view, from left to right, is the corner of the Lake Forest Corridor Center, a commercial shopping center, on Rancho Parkway; the intersection of Bake Parkway and Rancho Parkway; and the landscaped slope of the Rancho Business Center, which is accessed from Rancho Parkway South. Additionally, overhead utility lines are located along the northbound lanes of Bake Parkway. The Project site, including shade structures and other equipment associated with nursery operations, is located in the middle ground. The background includes limited views of commercial uses an undeveloped hillside east of Lake Forest Drive and business parks on Dimension Drive.

Project Renderings. The elementary school site, proposed for the northwest corner of the Project site, would be visible to motorists on Rancho Parkway, Bake Parkway, and southbound SR-241. The proposed three-story residential development (with an option for a fourth story) (specifically in Neighborhood 2) would be visible behind the elementary school site. The Project Rendering includes an inset photograph showing the conceptual architecture for Neighborhood 2, which would have a maximum building height of 50 ft and would be built with a maximum density of 15.0 dwelling units per acre (du/ac) (21.6 du/ac for the alternate row-towns). The senior housing site would be visible in the background along Bake Parkway (refer to the right side of the Project Rendering). No major landform alteration would be required to implement the elementary school and various proposed residential neighborhoods within the Project

site. As shown in the Project Rendering, the Project would be designed following the California Contemporary aesthetic, which includes Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles that would blend with existing commercial and residential development in the Project vicinity. Landscaping, consisting of mature accent trees, shrubs, and groundcover, would line the perimeter of the Project site.

As a part of the Project, the utility lines located along the sidewalk adjacent to the Project site's western boundary would be relocated underground. The utility line relocation would result in unobstructed views of the hillsides beyond the Project site to the south, which would improve view quality to and around the Project site.

The Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Although implementation of the Project would represent a substantial change to the visual character of the site, Project compliance with these design guidelines would ensure that future design and development on the Project site are of high quality and would maintain the Project's overall vision. Further, improvements associated with the relocation of utility lines underground would help improve views to and from the Project site and the surrounding area. Therefore, implementation of the proposed Project, as shown in Key View 1, would not substantially adversely affect views of scenic vistas. Impacts would be less than significant, and no mitigation would be required.

Key View 2. As shown on Figure 4.1.2(b), Key View 2 depicts the view of the Project site from the intersection of Rancho Parkway South and Bake Parkway looking south. Key View 2 represents the view of the western portion of the Project site for motorists traveling southbound on Bake Parkway.

Existing Conditions. In the foreground is the signalized intersection of Bake Parkway and Rancho Parkway South. As stated previously, Bake Parkway is a four-lane roadway with two lanes in each direction and includes a raised median. In the middle ground, the existing nursery is visible and includes shade structures, nursery plantings, farm equipment, a chain-link fence, and truck trailers. Overhead utility lines are located along the northbound lanes of Bake Parkway. In the background, limited views of the business parks along Dimension Drive are shown.

Project Renderings. The proposed two-story residential development (with an optional third story) (specifically Neighborhood 1) would be visible to travelers along Bake Parkway and Rancho Parkway South. The Project Rendering includes an inset photograph showing the conceptual architecture for Neighborhood 1, which would have a maximum building height of 40 ft and would be built with a density of 14.2 du/ac. Within Neighborhood 1, the neighborhood design would feature two residences facing the street and two rear units accessible from a shared motor court. Landscaping, consisting of mature trees, shrubs, and groundcover, would line the perimeter of the Project site. As shown in the Project Rendering, the Project would be designed following

the California Contemporary aesthetic, which includes Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles that would blend with existing commercial and residential development in the Project vicinity.

As a part of the Project, the utility lines located along the sidewalk adjacent to the Project site's western boundary would be relocated underground. The utility line relocation would result in unobstructed views of the hillsides beyond the Project site to the south, which would improve view quality to and around the Project site.

As discussed above, the Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Although implementation of the proposed Project would represent a substantial change to the visual character of the site, compliance with these design guidelines would ensure that future design and development on the Project site are of high quality and would maintain the Project's overall vision. Further, improvements associated with relocating utility lines underground would help improve views to and from the Project site and the surrounding area. Therefore, implementation of the proposed Project, as shown in Key View 2, would not substantially adversely affect views of scenic vistas. Project impacts would be less than significant, and no mitigation would be required.

Key View 3. As shown on Figure 4.1.2(c), Key View 3 depicts the view from Bake Parkway looking northeast from just west of the business park on Dimension Drive. Key View 3 represents the view of the southwestern portion of the Project site as seen by motorists traveling northbound on Bake Parkway.

Existing Conditions. Bake Parkway, including a bicycle lane and the sidewalk, is seen in the foreground. As stated previously, Bake Parkway is a four-lane roadway with two lanes in each direction. In the middle ground, the existing nursery is visible from this viewpoint and is predominantly composed of vacant land and a chain-link fence. Nursery plantings and truck trailers are also visible. Overhead utility lines are located along the northbound lanes of Bake Parkway. Views of the Santa Ana Mountains are seen in the background.

Project Renderings. The proposed senior affordable housing development would be visible to travelers along Bake Parkway. The senior housing development would be two to three stories, have a maximum building height of 50 ft, and would be developed at a maximum density of 38.9 du/ac. Landscaping, consisting of mature trees, shrubs, and groundcover, would line the perimeter of the Project site. As shown in the Project Rendering (Figure 4.1.2(c)), the Project would be designed following the California Contemporary aesthetic, which includes Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles that would blend with existing commercial and residential development in the Project vicinity. The existing sidewalk on Bake Parkway would be reconstructed to allow for a landscaped strip between Bake

Parkway and the sidewalk. A 20 ft landscaped area would be provided between the sidewalk and the wall located along the Project site's western boundary.

The utility lines located along the sidewalk adjacent to the Project site's western boundary would be relocated underground. The utility line relocation would result in unobstructed views in the Project site's vicinity and would improve view quality to and around the Project site.

The Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Although implementation of the Project would represent a substantial change to the visual character of the site because the nursery would be replaced by residential development, Project compliance with these design guidelines would ensure that future design and development on the Project site are of high quality and maintain the Project's overall vision. As shown in Key View 3, implementation of the Project could obstruct views of the Santa Ana Mountains to the north and east of the Project site; however, the existing development in the vicinity of the Project site is of similar height and bulk as the proposed residential development. As such, existing development in these areas currently inhibits views of scenic vistas because Lake Forest is almost entirely developed. Further, views of the Santa Ana Mountains are unobstructed to the western side of the Project looking northwest from this viewpoint. Therefore, implementation of the proposed Project, as shown in Key View 3, would not substantially adversely affect views of scenic vistas. Impacts would be less than significant, and no mitigation would be required.

Key View 4. As shown on Figure 4.1.2(d), Key View 4 depicts the view from the Serrano Creek Trail looking northwest. Key View 4 represents the view of the eastern portion of the Project site for pedestrians and cyclists on the Serrano Creek Trail.

Existing Conditions. In the foreground, existing vegetation along the Serrano Creek Trail is visible. The Project site is in the middle ground and contains nursery plants and shade structures. Residential and office uses west of Bake Parkway are visible in the background as well as two water towers located adjacent to the Baker Ranch Community Park. Most views of the Project site from the Serrano Creek Trail are obstructed by existing vegetation.

Project Renderings. The proposed two-story residential development (with an optional third story) (specifically Neighborhood 3) would be visible to cyclists and pedestrians along the Serrano Creek Trail. The Project Rendering includes an inset photograph showing the conceptual architecture for Neighborhood 3, which would have a maximum building height of 40 ft and would be built at a maximum density of 11.4 du/ac. The Area Plan characterizes Neighborhood 3 as a residential community featuring traditional single-family homes with modest front yards and more expansive backyards. Landscaping, consisting of mature trees, shrubs, and groundcover, would line the perimeter of the Project site. The proposed landscaping would be designed to

complement the existing dense vegetation along the Serrano Creek Trail shown from this viewpoint.

The Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Although implementation of the Project would represent a substantial change to the visual character of the site, Project compliance with these design guidelines would ensure that future design and development on the Project site are of high quality and maintain the Project's overall vision. As shown in Key View 4, implementation of the Project could obstruct views of the site from the Serrano Creek Trail; however, views of the Project site from the Serrano Creek Trail would be limited and infrequent due to existing dense vegetation, which significantly blocks views of the site. Key View 4 is one of the few viewpoints where the Project site would be visible from the Serrano Creek Trail; consequently, it is not representative of the typical views that trail users would experience. Therefore, implementation of the proposed Project, as shown in Key View 4, would not substantially adversely affect views of scenic vistas. Impacts would be less than significant, and no mitigation would be required.

Summary. Key Views 1 through 4 provided above illustrate development proposed on the Project site following implementation of the Area Plan. Although the Project would obstruct views of the Santa Ana Mountains in some places, views would be preserved to the western and eastern sides of the Project site and would be accessible to visitors around the site. Additionally, implementation of the proposed Project would alter one brief view from the Serrano Creek Trail; however, most views from the trail would be preserved due to dense vegetation obstructing views off the trail. Further, improvements associated with the relocation of utility lines underground would help improve views to and from the Project site and the surrounding area. For these reasons, implementation of the proposed Project would not substantially adversely affect views of scenic vistas. Impacts would be less than significant, and no mitigation would be required.

Threshold 4.1.2: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. As stated previously, the Project site is located in a fully developed area. The Project site is located approximately 10 mi northeast of the Pacific Ocean, although the ocean cannot be seen from the Project site due to the San Joaquin Hills southwest of the City. SR-241 is approximately 405 ft north of the Project site. According to the California Scenic Highway Mapping System, SR-241 is not officially designated as a State Scenic Highway, nor is it eligible for listing. In addition, there are no officially listed or eligible State Scenic Highways in the vicinity of the Project site.¹ The only officially designated State Scenic Highway in Orange County is a portion of State Route 91 (SR-91) located approximately 14 mi north of the Project site. The nearest State highway that is eligible for

¹ California Department of Transportation. California Scenic Highway Mapping System. Website: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ (accessed March 14, 2019).

official designation as a State Scenic Highway is a portion of Pacific Coast Highway (PCH or State Route 1 [SR-1]), which is located approximately 10.5 mi southwest of the Project site. Due to distance and intervening land uses, no portion of the Project site or surrounding area is viewable from the officially designated portion of SR-91 or the eligible portion of PCH. Therefore, the Project would not result in impacts related to the substantial damage of scenic resources within a State Scenic Highway. No mitigation would be required.

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

Less than Significant Impact. As stated previously, the United States Census Bureau designates the Project site as part of an urbanized area because the entire city is within the Mission Viejo-Lake Forest-San Clemente, CA Urbanized Area. The Project site's current land use designation (Business Park) and zoning classification (General Agriculture) are inconsistent. To implement the Area Plan, the Project would require approval of a General Plan Amendment (GPA) to change the Project site's General Plan land use designation to Low-Medium Residential and Institutional. A zone change would also be required to establish the Project site's zoning classification as a Planned Community District.

Zoning Code. Title 9, Planning and Zoning, of the Lake Forest Municipal Code includes provisions and regulations for planned development projects within the City. Chapter 9.112 requires that a Planned Community Program be developed for any project proposing a zone change to a Planned Community District. The Planned Community Program addresses the entire Project site and would be subject to approval by the City's Planning Commission, as well as adoption by the City Council. The Area Plan generally serves as the Planned Community Program for the Project and is intended to guide development and land uses for the planned community within the Project Site. Upon adoption, the Area Plan would become a part of the City's Zoning Code and an additional planned community—the Nakase Planned Community. In addition, the Proposed Zoning Map included in the Area Plan would be considered a component of the City's Zoning Map.

The Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Compliance with these design guidelines would ensure that future design and development on the Project site are of high quality and would maintain the Project's overall vision. The Project proposes a series of styles that reflect a California Contemporary aesthetic: Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles. The styles are cohesive and would provide for consistent design throughout the Project site.

Upon adoption of the Area Plan, the proposed Project would be consistent with the City's Zoning Code as it relates to aesthetics and scenic quality.

General Plan. The City of Lake Forest General Plan is intended to guide future growth and development within the city. The General Plan Land Use Element contains specific goals and policies related to aesthetics and scenic quality. As shown in Table 4.1.A and discussed above, the Project would be consistent with applicable General Plan goals and policies related to aesthetics and scenic quality. The proposed Project would be consistent with the City's General Plan as it relates to aesthetics and scenic quality.

Summary. The visual character and quality of the Project site and surrounding area would be preserved and enhanced through the application of the architectural and landscape design guidelines outlined in the Area Plan. The architectural and landscape design guidelines are intended to guide the quality and aesthetic value of future development introduced as a result of implementation of the Project. Any development undertaken as a result of implementation of the Project would be required to comply with the architectural and landscape design guidelines contained in the Area Plan. Furthermore, the Project would be consistent with other regulations governing scenic quality, including those outlined in the City of Lake Forest General Plan Land Use Element and the City's Municipal Code. Therefore, the proposed Project would neither substantially degrade the visual character of the Project site nor conflict with applicable zoning and other regulations governing scenic quality; therefore, no mitigation would be required.

Threshold 4.1.4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant Impact.

Light. The Project site is currently developed with few structures, and the majority of the Project site is not illuminated at night.

Construction activities would occur during daylight hours. Any construction-related illumination during evening and nighttime hours would consist of the minimum lighting required for safety and security purposes only and would occur only for the duration required for the temporary construction process. Mitigation Measure 4.4.5 (refer to Section 4.4, Biological Resources) requires construction Best Management Practices (BMPs) intended to reduce and avoid indirect impacts to wildlife related to construction lighting. Mitigation Measure 4.4.5 prohibits the placement of construction lighting within 200 ft of Serrano Creek unless a qualified biologist confirms the lighting does not illuminate Serrano Creek. With implementation of Mitigation Measure 4.4.5, and due to the limited nature of nighttime construction lighting, light resulting from construction activities would not substantially impact sensitive uses, substantially alter the character of off-site areas surrounding the construction area, or interfere with the performance of an off-site activity. Therefore, construction of the proposed Project would not create a new source of substantial light that would substantially adversely affect day or nighttime views in the area, and light impacts associated with construction would be less than significant. No mitigation would be required.

Table 4.1.A: General Plan Consistency Analysis

Goals and Policies	Proposed Project Consistency
Land Use Element	
<p>Goal 2.0: A distinct image and identity for Lake Forest.</p>	<p>Consistent. The Project would help maintain a distinct community identity because, upon implementation of the Area Plan, it would create an aesthetically cohesive development that would be visually consistent with other nearby residential planned communities. Implementation of architectural and landscape design guidelines included in the Area Plan is anticipated to improve the existing visual character of the Project site and would serve to provide increased visual cohesion between the Project site and surrounding area. Therefore, the proposed Project would be consistent with Goal 2.0 in the Land Use Element.</p>
<p>Policy 2.1: Enhance the physical attributes of Lake Forest to create an identifiable and distinct community within Orange County.</p>	<p>Consistent. The proposed Project would contribute to the creation of an identifiable and distinct community within Lake Forest. The Area Plan provides for over 28 acres of parks, open space, and habitat restoration area, most of which would be available for public use. Specifically, improvements along the southeastern portion of the Project site are anticipated to enhance existing physical attributes of Lake Forest due to its proximity to the Serrano Creek Trail. The proposed Project’s Central Park would provide a memorable entry to the community as well as space for public events like Farmer’s Markets, art fairs, and other community activities. Furthermore, implementation of architectural and landscape design guidelines included in the Area Plan would serve to provide increased visual cohesion between the Project site and its surrounding area and would create neighborhoods that possess a unique sense of place and individuality. Therefore, the Project would be consistent with Policy 2.1 in the Land Use Element.</p>
<p>Policy 2.2: Promote high quality in the design of all public and private development projects.</p>	<p>Consistent. The Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Compliance with these design guidelines would ensure that future design and development on the Project site are of high quality and would maintain the Project’s overall vision. Therefore, the Project would be consistent and compatible with Policy 2.2 in the Land Use Element.</p>
<p>Goal 3.0: New development that is compatible with the community.</p>	<p>Consistent. The Project proposes a series of styles that reflect a California Contemporary aesthetic: Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles. The styles are cohesive and would provide for consistent design throughout the Project site. In addition, the proposed architectural styles included in the Area Plan would be compatible with the existing style of the surrounding communities. Furthermore, implementation of the architectural and landscape design guidelines included in the Area Plan is anticipated to improve the existing visual character of the Project site and would serve to provide increased visual cohesion between the Project site and the surrounding area. Therefore, the proposed Project would be consistent with Goal 3.0 in the Land Use Element.</p>
<p>Policy 3.1: Ensure that new development fits within the existing setting and is compatible with the physical characteristics of available land, surrounding land uses, and public infrastructure availability.</p>	<p>Consistent. The Area Plan would facilitate the development of the 122-acre Project site as a master planned community. The planned community would be consistent with neighboring developments and reflect the vision of the City of Lake Forest, while also demonstrating a distinct community character and establishing a sense of place.</p> <p>The areas surrounding the Project site consist of mixed land uses, including commercial, office, open space, industrial, and residential uses. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the site. Residential planned communities in the vicinity of the Project site include the Foothill Ranch Planned</p>

Table 4.1.A: General Plan Consistency Analysis

Goals and Policies	Proposed Project Consistency
	Community (PC 8) to the north, the Portola Hills Planned Community (PC 9) to the northeast, the Baker Ranch Planned Community (PC 7) to the west, and the Rancho de Los Alisos Planned Community (PC 3) to the southeast. As discussed further in Chapters 4.14 (Public Services), 4.16 (Transportation/Traffic), and 4.18 (Utilities and Service Systems), the proposed Project would be compatible with available public infrastructure in Lake Forest. Therefore, the proposed Project would be consistent with Policy 3.1 in the Land Use Element.
<p>Policy 3.2: Preserve and enhance the quality of Lake Forest residential neighborhoods by avoiding or abating the intrusion of disruptive, non-conforming buildings and uses.</p>	<p>Consistent. The Area Plan would facilitate the development of the 122-acre Project site as a master planned community. The Project proposes up to 675 two- and three-story, single-family residential units on approximately 50.5 acres of the Project site. Five separate neighborhoods would each display a distinct style of single-family home. In addition, the Project proposes affordable housing units for senior citizens, an elementary school, and parks and open space.</p> <p>Residential planned communities in the vicinity of the Project site include the Foothill Ranch Planned Community (PC 8) to the north, the Portola Hills Planned Community (PC 9) to the northeast, the Baker Ranch Planned Community (PC 7) to the west, and the Rancho de Los Alisos Planned Community (PC 3) to the southeast. The Project proposes a mix of residential, institutional, and recreation and open space uses as part of a master planned community. These uses are generally consistent with the land uses in the surrounding planned communities. As such, the proposed Project would preserve and enhance the quality of the Lake Forest residential neighborhoods. Therefore, the Project would be consistent with Policy 3.2 in the Land Use Element.</p>
<p>Policy 3.4: Blend residential and nonresidential development with landscaping and architectural design techniques to achieve visual compatibility.</p>	<p>Consistent. The Project proposes a mix of residential, institutional, and recreation and open space as part of a master planned community. The Area Plan includes architectural and landscape design guidelines that are intended to provide design direction and standards for the development of the Project site. Compliance with these design guidelines would ensure that future design and development would result in visual compatibility on the Project site. Therefore, the Project would be consistent and compatible with Policy 3.4 in the Land Use Element.</p>

Source: General Plan Land Use Element (City of Lake Forest 1994b, revised 2016).
Area Plan = *Nakase Property Area Plan* (Woodley Architectural Group 2019)

The Project proposes adoption of the Area Plan, which would result in the development of a planned community, comprised of up to 675 single-family residential units, up to 101 senior affordable housing units, an elementary school with a capacity of up to 1,000 students, multiple parks and open space areas, recreation amenities, and an internal circulation system. Due to the intensification in land use from agriculture to a planned community, the Project would require the installation of new lighting. Spill light occurs when lighting fixtures such as streetlights, parking lot lighting, exterior building lighting, and landscape lighting are not properly aimed or shielded to direct light to the desired location, and light escapes and partially illuminates a surrounding location. Sensitive uses (e.g., the Serrano Creek Trail and Nature Park) surrounding the Project site could be impacted by the light from development within the boundaries of the Project site.

The Area Plan specifies that lighting should be unobtrusive and would be installed at a low level to ensure safety for the residents and to help reinforce the pedestrian scale of the community. Lighting installed as part of the planned community would use warm-colored white light-emitting diode (LED) light sources. Improvements to the Serrano Creek Trail would include bollard lighting in locations where feasible and appropriate. As proposed, the school site would not include overhead lighting for the sports fields. Further, to minimize spill-over lighting onto adjacent properties following implementation of the proposed Project, all exterior on-site lighting would be shielded. Mitigation Measure 4.1.1 (see Section 4.1.9.2, Mitigation Measures) requires the Project Applicant/Developer to prepare a comprehensive lighting plan and a photometric survey prior to construction to demonstrate that no spill lighting occurs in sensitive areas. This measure is intended to minimize the impacts of new sources of light to adjacent land uses including Serrano Creek, limit nighttime lighting to that necessary for security, and ensure that lighting is shielded to reduce spill lighting and night glow effects. Implementation of Mitigation Measure 4.1.1 would reduce potential impacts related to new lighting to a less than significant level.

Glare. As stated previously, the Area Plan would result in the development of a planned community comprised of up to 675 single-family residential units, up to 101 senior affordable housing units, an elementary school with a capacity of up to 1,000 students, multiple parks and open space areas, recreation amenities, and an internal circulation system. The anticipated building materials (e.g., concrete, stucco, wood) and proposed uses are typical of those found in the surrounding areas and are not anticipated to create unusual or isolated glare effects that would affect daytime visibility or views in the Project vicinity. In addition, the use of extensive landscaping along the Project's boundaries (refer to Figure 3.8 in Chapter 3.0, Project Description) and light shielding as required by Mitigation Measure 4.1.1 would prevent direct views of light sources and reduce the potential for glare during the day. With implementation of Mitigation Measure 4.4.1, impacts related to glare would be less than significant.

Summary. The proposed Project is not anticipated to incorporate design features that would result in excessive lighting or the generation of glare on site; however, Mitigation Measure 4.1.1 requires the Project Applicant/Developer to prepare a comprehensive lighting plan and a photometric survey prior to construction to demonstrate that no spill lighting would occur in sensitive areas. With implementation of Mitigation Measures 4.1.1 and 4.4.5, Project-related impacts related to light and glare are anticipated to be less than significant.

4.1.7 Cumulative Impacts

The purpose of this section is to evaluate any additional incremental impact that the proposed Project is likely to cause over and above the combined impacts of recently approved and proposed projects in the City and its sphere of influence. As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative study area. However, each development proposal received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts to aesthetics, appropriate mitigation measures would be identified to reduce and/or avoid impacts related to aesthetics.

For the reasons outlined above in Section 4.1.6, Project Impacts, implementation of the proposed Project would not result in a significant cumulative impact related to aesthetics. The proposed Project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to aesthetics. With compliance with these regulations, cumulative impacts related to aesthetics would be less than significant. Therefore, implementation of the proposed Project would not result in a significant cumulative impact related to aesthetics.

4.1.8 Level of Significance Prior to Mitigation

The following potential aesthetics impacts would be less than significant prior to mitigation: (1) scenic vistas, (2) scenic vistas in State Scenic Highways, and (3) visual character or quality of public views. Impacts related to light and glare would be potentially significant, and mitigation is required.

4.1.9 Regulatory Compliance Measures and Mitigation Measures

4.1.9.1 Regulatory Compliance Measures

There are no regulatory compliance measures applicable to the proposed Project.

4.1.9.2 Mitigation Measures

Mitigation Measure 4.1.1

Comprehensive Lighting Plan. Prior to issuance of the first building permit for production homes, the Project Applicant/Developer shall prepare a comprehensive lighting plan for review and approval by the City of Lake Forest (City) Director of Community Development or designee. The lighting plan shall be prepared by a qualified engineer and shall address all aspects of lighting, including, but not limited to, height, type, location, infrastructure, and safety. The lighting plan shall include the following in conjunction with other measures as determined necessary by the illumination engineer:

- a. All Project lighting shall be hooded or shielded to focus the light downward and prevent light spillage onto adjacent properties.
- b. All lights shall be designed and located so that direct light rays are confined to the premises.
- c. Parking area lighting shall be Illuminating Engineering Society "Full Cut Off" designated or "fully shielded" fixtures so that no light is emitted above the lowest light-emitting part of the fixture.
- d. Light levels at the property line shall not exceed 0.1 foot-candle adjacent to the Open Space & Habitat & Restoration Area properties.
- e. Light standards shall not exceed 20 feet in height.

The Lighting Plan shall also include a photometric survey. The photometric survey shall demonstrate that lighting values do not exceed 0.1 fc adjacent to the Open Space & Habitat & Restoration Area and that no direct rays shine onto public streets or adjacent sites.

4.1.10 Level of Significance after Mitigation

With implementation of Mitigation Measures 4.1.1 and 4.4.5, the proposed Project would result in less than significant impacts related to aesthetics.

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4.2 AGRICULTURE AND FORESTRY

This section examines the potential for the proposed Project to significantly impact agricultural resources. This section is based on information obtained from the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), the United States Department of Agriculture, the Natural Resources Conservation Service, the Orange County Agricultural Commissioner/Sealer of Weights and Measures Office, the Orange County General Plan (2018), the City of Lake Forest General Plan Update Existing Conditions Report (2018c), and the 2008 City of Lake Forest *Opportunities Study Area Program Environmental Impact Report* (OSA PEIR). This section does not analyze impacts to forest resources because the Initial Study concluded that no forestland resources are within, adjacent to, or near the Project site.

4.2.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). No comments related to agriculture or forestry were received during the public scoping period.

4.2.2 Existing Environmental Setting

The proposed Project is located in Lake Forest, Orange County (County), California. This section discusses the status of agricultural resources in Orange County, Lake Forest, and on the Project site.

4.2.2.1 Orange County

Orange County was once a rural area supported primarily by an agricultural economy. During the 1930s and 1940s, the economy began to change, landowners began to convert agricultural land to urban development, and agricultural uses in Orange County began to decline (County of Orange 2005). Urban areas continue to encroach on agricultural lands in the County and there is continued pressure to convert agricultural land to urban uses. Additionally, the cost of irrigation water, agricultural land tax rates, labor costs, and damage from vandalism have increased production costs, making it more difficult to maintain a successful agricultural operation in the County.

The most recent agricultural land conversion data available for Orange County is for the 2014–2016 period and was obtained through the DOC FMMP (California DOC 2016a). Land converted in this period is shown in Table 4.2.A, Orange County Agricultural Land Conversion 2014–2016.

In summary, for the 2-year period from 2014 to 2016, the total amount of Important Farmland inventoried decreased by 356 acres (ac), and the total amount of agricultural land that was inventoried in the County decreased by 348 ac. The reason there was a larger decrease in Important Farmland than in agricultural land as a whole is because 8 ac of grazing land were added to the inventory of agricultural land in the County, thereby offsetting the loss of agricultural land by 8 ac. However, grazing land is not considered to be Important Farmland; therefore, it did not affect the net loss of acres of Important Farmland.

Table 4.2.A: Orange County Agricultural Land Conversion 2014–2016

Land Use Category	Total Acreage Inventoried		2014–2016 Acreage Changes		
	2014	2016	Acres Lost (-)	Acres Gained (+)	Net Acreage Changed
Prime Farmland	2,851	2,391	373	213	-160
Farmland of Statewide Importance	305	411	8	114	106
Unique Farmland	3,215	2,913	375	73	-302
Farmland of Local Importance	0	0	0	0	0
Important Farmland Subtotal	6,071	5,715	756	400	-356
Grazing Land	37,106	37,114	331	339	8
Agricultural Land Subtotal	43,177	42,829	1,087	739	-348
Urban and Built-Up Land	291,246	292,689	399	1,842	1,443
Other Land	174,279	172,173	1,352	246	-1,106
Water Areas	1,015	1,026	7	18	11
Total Area Inventoried	509,717	509,717	2,845	2,845	0

Source: California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program, Table A-23 Orange County 2014-2016 Land Use Conversion.

Table 4.2.B, Orange County Agricultural Production Value 2012 vs. 2017,¹ shows the value of agricultural production in 2012 versus 2017 and provides a percent change between these years.

Table 4.2.B: Orange County Agricultural Production Value 2012 vs. 2017

Agricultural Category	2012 Value	2017 Value	Percent Change
Livestock	\$375,953	\$2,094,000	457.5%
Field	\$696,850	\$1,187,000	70.3%
Nursery	\$70,630,679	\$61,670,000	-12.7%
Tree and Berry	\$44,120,251	\$33,935,000	-23.1%
Vegetable	\$20,486,704	\$14,351,000	-29.9%
Total	\$136,310,437	\$113,237,000	-16.9%

Source: Orange County Agricultural Commissioner’s Office, *Orange County Annual Crop Report 2017* and *Orange County Crop Report 2012*, <http://www.ocagcomm.com/services/report> (accessed December 10, 2018).

While the value of livestock and field crops experienced an overall increase of 457.5 percent and 70.3 percent, respectively, the agricultural production value in Orange County decreased by 16.9 percent between 2012 and 2017.

4.2.2.2 City of Lake Forest

Lake Forest has had a development history similar to that of the County. In the early 20th century, Lake Forest, known at the time as El Toro, was an unincorporated agricultural community. After World War II, the area began to urbanize, and agricultural uses were eventually replaced with

¹ The 2017 Orange County Agricultural Production Value data is the most current year available from the Orange County Agricultural Commissioner’s Office.

residential, commercial, and industrial uses (City of Lake Forest 2018c). Today Lake Forest is primarily urban with limited areas of land under agricultural production. The City of Lake Forest 2040 General Plan Update Existing Conditions Report presents existing “on the ground” land uses on individual parcels in the City from data that has been gathered by the Orange County Assessor’s Office. According to the data, the City currently contains 18 parcels that are occupied by agricultural uses (general agricultural uses, horse ranches, nurseries, and other agriculture), totaling 192 ac. According to the most current 2016 FMMP data, the City contains 140.3 ac of Important Farmland. This acreage includes 0.2 ac of Prime Farmland, and 140.1 ac of Unique Farmland. Although there are 192 ac of land within the City currently in agricultural use, none of the land is designated for agricultural use because the existing Lake Forest General Plan does not include any agricultural land use designations. Chapter 9.72 of the Lake Forest Municipal Code discusses non-residential zoning districts in the City of Lake Forest, including zone designation A1 – Agricultural District. According to 2012 data from the Southern California Association of Governments (SCAG)¹, there are approximately 476 ac (which includes the proposed 122 ac Project site) of A1 – Agricultural District zoned parcels in the City of Lake Forest.

Given that agricultural uses in Lake Forest are limited to a total of 192 ac of land, the agricultural production value is not readily available; therefore, the agricultural production value of Lake Forest is not included as part of this existing conditions discussion.

4.2.2.3 Project Site

The Project site is located within Lake Forest and is approximately 122 ac in size (Assessor’s Parcel Number [APN] 612-221-01). Historically, the Project site was used primarily for agriculture. Prior to the late 1920s, the Project site was used for cattle grazing. From the late 1920s through the late 1960s, the parcel was developed with orchards. In the late 1960s, the northwestern portion of the Project site continued operating as an orchard while the remainder of the Project site was converted to a retail nursery. In 1988, the citrus orchards were removed from the remainder of the Project site, and the parcel was fully converted to a retail nursery. The Project site is currently operating as a retail nursery with all products grown and/or sold in pots; in-ground cultivation is not occurring on site. The main source of water used on the Project site is an on-site well; however, the Irvine Ranch Water District (IRWD) does provide water to the site but is used only as backup and to supplement during hot weather.

According to the DOC FMMP, a majority of the Project site (119.2 ac of the 122 ac Project site) is considered Unique Farmland (DOC 2016). The Project site is not under a Williamson Act contract or a Farmland Security Zone (FSZ) contract. The City’s General Plan Land Use Map designates the Project site as Business Park and Business Development Overlay (BDO). The Project site is classified as A1 – Agricultural District per the City’s Zoning Code.

¹ Zoning information for the City of Lake Forest was acquired by using SCAG’s 2012 general plan land use and zoning data, developed for the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The dataset is parcel-based and reviewed by local jurisdiction staff during the SCAG’s Local Input Process (V 2.0). These data were deemed newer and more accurate than the City’s hosted zoning information, which was from 2008.

Based on the United States Department of Agriculture (USDA) Soil Survey for Orange County, soil types on the proposed Project site are shown in Table 4.2.C, Soil Types of the Project Site. The dominant soil type on the Project site is Unit 207 Sorrento loam, 2 to 9 percent slopes covering approximately 48.9 ac or 40 percent of the Project site.

The DOC uses two systems to determine a soil's agricultural productive capability: the USDA Soil Capability Classification System and the Storie Index rating system.

The USDA Soil Capability Classification System indicates the suitability of soils for most kinds of crops. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I), and soils that are unsuitable for agriculture receiving the lowest rating (Class VIII). Specific subclasses are also used to further characterize soils.

Generally, as the range of the Capability Class increases, yields and profits from these lands are more difficult to obtain. Varying Capability Class ratings of soils are found on the Project site and are defined as follows (it should be noted that Class I and Class V soil types are not located on the Project site):

- **Class II:** These soils have some limitations that restrict the choice of plants or that require moderate conservation practices. These soils require careful soil management, including conservation practices, to prevent deterioration or to improve air and water relations when the soils are cultivated. The limitations are few and the practices easy to apply. The soils may be used for cultivated crops, pasture, range, woodland, or wildlife food and cover.
- **Class III:** These soils have severe limitations that reduce the choice of plants or require special conservation practices or both. These soils have more restrictions than those in Class II, and when used for cultivated crops, the conservation practices are usually more difficult to apply and maintain. They may be used for cultivated crops, pasture, woodland, range, or wildlife food and cover.
- **Class IV:** These soils have very severe limitations that restrict the choice of plants, require very careful management, or both. The restrictions in this class of soils are greater than those in Class III. When these soils are cultivated, more careful management is required and conservation practices are more difficult to apply and maintain. Soils in this class may be used for crops, pasture, woodland, range, or wildlife food and cover.
- **Class VI:** These soils have severe limitations that make them generally unsuitable to cultivation and limit their use largely to pasture or range, woodland, or wildlife food and cover. Some soils in this class can be safely used for common crops provided unusually intensive management is used. Some of the soils in this class are also adapted to special crops such as sodded orchards, blueberries, or the like, requiring soil conditions unlike those demanded by common crops. Depending upon soil features and local climate, the soils may be well or poorly suited to woodlands.

Table 4.2.C: Soil Types of the Project Site

Soil Unit Number	Soil Name	Acres	Proportion of Project Area	Soil Capability Classification	Storie Index Rating	Soil Description
135	Capistrano sandy loam, 2% to 9% slopes	5.6	5%	IIIe	90	This soil is gently sloping to moderately sloping and occurs mostly as long, narrow areas in small valleys. If the soil is bare, runoff is slow to medium and the erosion hazard is moderate. Present land uses for this soil include citrus, barley, pasture, range, wildlife, and recreation.
136	Capistrano sandy loam, 9% to 15% slopes	4.0	3%	IVe	81	This soil is strongly sloping and generally occurs on small toe slope fans and in small, narrow foothill valleys. If has the profile described as typical of the Capistrano services. If the soil is bare, runoff is medium and the erosion hazard is moderate. Present land uses for this soil include irrigated citrus, dryland barley, pasture, and range.
142	Cieneba sandy loam, 30% to 75% slopes, eroded	20.2	17%	VIIe	7	This soil is steep to very steep and eroded. It is only 5 to 15 inches deep over bedrock and is cut by gullies and intermittent drainage channels in many places. Geologic erosion is active, and small landslips are common. If the soil is bare, runoff is rapid and the erosion hazard is high. Present land uses for this soil are limited to range, watershed, and wildlife habitat.
149	Cropley clay, 2% to 9% slopes	27.8	23%	IIe	47	This soil is gently sloping to moderately sloping and occurs as irregular, oblong areas. If the soil is bare, runoff is medium and the erosion hazard is slight. Present land uses for this soil include citrus, barley, pasture, range, and urban development.
176	Myford sandy loam, 15% to 30% slopes	1.5	1%	VIe	27	This moderately steep soil generally occurs on side slopes of terraces. If the soil is bare, runoff is rapid and the erosion hazard is high. Available water capacity is 2 to 4 inches. The effective rooting depth is 12 to 19 inches for root-sensitive crops. For other crops, it is 60 inches or more. Present land uses for this soil include range, barley, and urban development.
174	Myford sandy loam, 2% to 9% slopes	11.6	10%	VIe	35	This gently sloping to moderately sloping soil generally occurs on broad terraces. If the soil is bare, runoff is medium and the erosion hazard is moderate. Available water capacity is 1.5 to 3.5 inches. The effective rooting depth is 5 to 12 inches for root-sensitive crops. For other crops, it is 60 inches or more. Present land uses for this soil include range, barley, and urban development.

Table 4.2.C: Soil Types of the Project Site

Soil Unit Number	Soil Name	Acres	Proportion of Project Area	Soil Capability Classification	Storie Index Rating	Soil Description
191	Riverwash	1.4	1%	VIIIw	40	This soil consists of areas of unconsolidated alluvium that is generally stratified, varies widely in texture, recently deposited by intermittent streams, and subject to frequent changes through stream overflow. Runoff is generally rapid, and the erosion hazard is high. Deposition and removal of fresh alluvium are common. Riverwash has little or no agricultural value. Present uses for this soil include watercourses, groundwater recharge, sand and gravel pits, and wildlife habitat.
207	Sorrento loam, 2% to 9% slopes	48.9	40%	Ile	90	This gently sloping to moderately sloping soil generally occurs on upper valley fans and along stream channels. If the soil is bare, runoff is slow to medium and the erosion hazard is slight to moderate. Available water capacity is 10 to 13 inches. Present land uses for this soil include irrigated crops, citrus, range, and urban development.
Total		121.1	100%			

Source: United States Department of Agriculture, Soil Conservation Service and Forest Service. 2016. *Soil Survey of Orange County and Western Part of Riverside County, California*.

- Ile = Soil Capability Class II, Subclass (e), Erosion
- IIIe = Soil Capability Class III, Subclass (e), Erosion
- IVe = Soil Capability Class IV, Subclass (e), Erosion
- VIe = Soil Capability Class VI, Subclass (e), Erosion
- VIIe = Soil Capability Class VII, Subclass (e), Erosion
- VIIIw = Soil Capability Class VIII, Subclass (w), Excess Water

- **Class VII:** Soils in this class have very severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife. Physical conditions of soils in this class are such that it is impractical to apply such pasture or range improvements as seeding, liming, fertilizing, and water control with contour furrows, ditches, diversions, or water spreaders. Depending upon the soil characteristics and local climate, soils in this class may be well or poorly suited to woodland. They are not suited to any of the common cultivated crops; in unusual instances, some soils in this class may be used for special crops under unusual management practices.
- **Class VIII:** Soils and landforms in this class have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife, or water supply, or to aesthetic purposes. Soils and landforms in this class cannot be expected to return significant on-site benefits from management for crops, grasses, or trees, although benefits from wildlife use, watershed protection, or recreation may be possible. Badlands, rock outcrop, sandy beaches, riverwash, mine tailings, and other nearly barren lands are included in this class. It may be necessary to protect and manage plant growth in soils and landforms in this class in order to protect other more valuable soils, to control water, or for wildlife or aesthetic reasons.

As noted above, subclasses are used to further define specific limitations for soils classified in the USDA Soil Capability Classification System. The four kinds of limitations recognized at the subclass level include: risks of erosion, designated by symbol (e); wetness, drainage, or overflow (w); rooting-zone limitations (s); and climatic limitations (c). Subclasses that are identified for the soils located on the Project site are defined as follows:

- **Subclass (e), Erosion:** This subclass is made up of soils where the susceptibility to erosion is the dominant problem or hazard in their use. Erosion susceptibility and past erosion damage are the major soil factors for placing soils in this subclass.
- **Subclass (w), Excess Water:** This subclass is made up of soils where excess water is the dominant hazard or limitation in their use. Poor soil drainage, wetness, high water table, and overflow are the criteria for determining which soils belong in this subclass.

The Storie Index is another method used to rate soils and is also based on the soil characteristics and the land's potential utilization and productive capacity. The Storie index rating system ranks soils on a 100-point scale that is divided into six grade classes as follows:

- **Grade 1, Excellent:** 81 to 100 points
- **Grade 2, Good:** 61 to 80 points
- **Grade 3, Fair:** 41 to 60 points
- **Grade 4, Poor:** 21 to 40 points
- **Grade 5, Very Poor:** 11 to 20 points
- **Grade 6, Nonagricultural:** 10 points or less

Four factors that represent the inherent characteristics and qualities of the soil are considered in the Storie Index rating system: profile characteristics, texture of the surface layer, slope, and other

factors (i.e., drainage, salinity). The majority of the soils (62.6 ac) on the Project site have a Storie Index rating below 80 points.

4.2.3 Regulatory Setting

The following section describes the regulations applicable to analyzing the potential impacts to agricultural resources from development of the proposed Project.

4.2.3.1 Federal Regulations

Federal regulations regarding agricultural resources do not apply to the proposed Project.

4.2.3.2 State Regulations

California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP). In 1982, the DOC began coordinating with the USDA Soil Conservation Service in the preparation and completion of Important Farmland mapping for California through the establishment of the FMMP. The FMMP created a greater level of mapping compared to the USDA Soil Conservation Service by modifying the federal criteria for use in California and incorporating irrigation criteria for farmland significance. The primary purpose of the FMMP is to monitor the conversion of California's agricultural lands. The DOC Division of Land Resource Protection works with landowners, local governments, and researchers to conserve California's farmland and open space resources based on information provided in the FMMP.

The DOC FMMP produces maps and statistical data used for analyzing impacts on agricultural resources. Agricultural land is categorized according to soil quality and irrigation status. The maps are updated every 2 years through review of aerial photographs, a computer mapping system, public review, and field reconnaissance. The latest statewide data available are for the period from 2014 to 2016. The FMMP categories are defined as follows:

- **Prime Farmland:** This land category has the best combination of physical and chemical features for sustaining long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce crops with sustained high yields. The land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance:** This category is similar to Prime Farmland but with minor shortcomings (e.g., greater slopes or less ability to store soil moisture). The land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland:** This category consists of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards. The land must have been cropped at some time during the 4 years prior to the mapping date.

- **Farmland of Local Importance:** This land category is important to the local agricultural economy as determined by each county's Board of Supervisors and a local advisory committee.
- **Grazing Land:** This type of land is occupied with vegetation suited to grazing livestock. This category was developed in cooperation with the California Cattleman's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit is 40 ac.
- **Urban and Built-Up Land:** This type of land is occupied by structures with a building density of at least one unit to 1.5 ac, or approximately six structures to a 10 ac parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.
- **Other Land:** This type of land is not included in any other mapping category. Common examples include low-density rural developments, brush, timber wetland, riparian area not suitable for livestock grazing, and water bodies smaller than 40 ac. Vacant and nonagricultural land surrounded on all sides by urban development that are greater than 40 ac are mapped as Other Land.

The DOC FMMP considers Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance collectively as Important Farmland (a term that will be used throughout this EIR section).

Williamson Act and Farm Land Security Act. The California Land Conservation Act, better known as the Williamson Act, has been the State's most important agricultural land protection program since its enactment in 1965. Fundamentally, the Williamson Act is a State policy administered by local governments. Local governments are not mandated to administer the Act, but those that do have some latitude to tailor the program to suit local goals and objectives.

Williamson Act contracts have a minimum term of 10 years, with renewal occurring automatically each year (local governments can establish initial contract terms for longer periods of time). The contracts run with the land and are binding on all successors in interest of the landowner. Only land located within an agricultural preserve is eligible for Williamson Act contracts. An agricultural preserve defines the boundary of an area within which a city or county would enter into contracts with landowners. The boundary is designated by resolution of the board of supervisors or city council having jurisdiction. The rules of each agricultural preserve specify the uses allowed. Generally, any commercial agricultural uses would be permitted within any agricultural preserve. In addition, local governments may identify compatible uses allowed with a use permit.

In August 1998, Senate Bill (SB) 1182 established the FSZ provisions of the Williamson Act. An FSZ is created within an agricultural preserve by County Board of Supervisors' approval and at the request of a landowner or group of landowners. FSZ contracts offer landowners greater property tax reductions in return for an initial contract term of 20 years, with renewal occurring automatically each year. Land restricted by an FSZ contract is valued for property assessment purposes at 65 percent of its Williamson Act valuation, or 65 percent of its Proposition 13 valuation, whichever is

lower. New special taxes for urban-related services must be levied at an unspecified reduced rate unless the tax directly benefits the land or living improvements. Cities and special districts that provide non-agricultural services are generally prohibited from annexing land enrolled under an FSZ contract. Similarly, school districts are prohibited from taking FSZ lands for school facilities.

4.2.3.3 Regional Regulations

Regional regulations regarding agricultural resources do not apply to the proposed Project.

4.2.3.4 Local Regulations

Orange County Resources and Development Management Department. The Orange County Resources and Development Management Department (RDMD) has instated the Pesticide Regulation Program to enforce State pesticide laws and regulations and to protect the agricultural and urban development throughout Orange County. This program also protects people working with and around pesticides from exposure to hazardous pesticide levels through an ongoing inspection program focused on commercial pesticide use. The California Department of Pesticide Regulation oversees the Orange County Pesticide Regulation Program.

City of Lake Forest General Plan. The City of Lake Forest General Plan contains goals, policies, and plans intended to guide growth and development of the City. The City is currently preparing General Plan Update 2040, which is anticipated to be approved in 2019. The current General Plan consists of the following elements:

- Land Use Element (revised September 2016)
- Housing Element (January 2014)
- Circulation Element (revised July 1, 2008)
- Recreation and Resources Element (revised September 2016)
- Safety and Noise Element
- Public Facilities and Growth Management Element

The current General Plan does not contain goals, policies, or plans related to the conservation of agricultural resources. The General Plan Land Use Element does not identify any agricultural land uses within the City's jurisdiction.

City of Lake Forest Municipal Code. The City's Municipal Code does not have any codes that pertain to agricultural conservation or right-to-farm policies. However, guidelines and provisions related to agricultural development are addressed in Chapter 9.72, A1 – Agricultural District:

- **A1 – Agricultural District** allows for agriculture, outdoor recreational uses, and low-intensity uses that predominantly have open space characteristics. This designation is also intended to be used as an interim zone in those areas the General Plan may designate for more intensive urban uses in the future. The Project site is currently zoned as A1 – Agricultural District.

4.2.4 Methodology

The potential Project impacts to agricultural resources were evaluated on a qualitative and quantitative basis. Quantitative impacts were assessed by completing the Land Evaluation and Site Assessment (LESA) model as well as using geographic information system (GIS) tools to calculate the exact acreage of Important Farmlands that would be impacted by development of the proposed Project. Qualitative impacts were assessed by evaluating the Project's potential for impacting agricultural activities within the City and County. The agricultural resources analysis is based on information from a number of sources, including the DOC, the Orange County Agricultural Commissioner's office, and the City of Lake Forest. The DOC LESA model was also used (refer to Appendix B).

4.2.4.1 California Agricultural Land Evaluation and Site Assessment Model

LESA is a term used to define an approach for rating the relative quality of land resources based on specific measurable features. The formulation of a California LESA Model is the result of SB 850 (Chapter 812/1993), which charges the Resource Agency (in consultation with the Governor's Office of Planning and Research) with developing an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines concerning agricultural lands. Such an amendment is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code [PRC] Section 21095). A LESA analysis is based on the definition of agricultural land contained in CEQA, PRC Section 21060.1:

21060.1 (a) "Agricultural land" means prime farmland, farmland of statewide importance, or unique farmlands, as defined by the United States Department of Agriculture land inventory and monitoring criteria as modified for California.

21060.1 (b) In those areas of the state where lands have not been surveyed for the classifications specific in subdivision (a), "agricultural land" means land that meets the requirement of "prime agricultural land" as defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code [the Williamson Act].

4.2.5 Thresholds of Significance

The thresholds for agriculture and forestry impacts used in this analysis are consistent with Appendix G of the State CEQA Guidelines. Agricultural impacts associated with implementation of the proposed Project may be considered significant if the agricultural impacts exceed the Thresholds of Significance identified below:

Threshold 4.2.1: 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

- Threshold 4.2.2:** Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Threshold 4.2.3:** 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))?
- Threshold 4.2.4:** Result in the loss of forest land or conversion of forest land to non-forest use.
- Threshold 4.2.5:** 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

The Initial Study, included as Appendix A, substantiates that there would be no impacts associated with Thresholds 4.2.3 and 4.2.4. These thresholds will not be addressed in the following analysis.

4.2.6 Project Impacts

A portion of the Project site (approximately 45 ac [Site 7]) was analyzed for conversion to urbanized uses in an EIR prepared by the City in 2008 (i.e., the OSA PEIR). The Project impact analysis takes into account the impact conclusions on the 45 ac of land that were previously analyzed as part of the OSA PEIR.

- Threshold 4.2.1:** Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Significant Impact. The Project site is currently occupied by a retail nursery with above-ground potted plant stock for sale. There is no in-ground agricultural production currently occurring on the Project site. Implementation of the proposed Project would result in the permanent conversion of 119.2 ac of Important Farmland (Unique Farmland as designated by the DOC FMMP) on the 122 ac Project site to non-agricultural uses.

In order to determine the significance of this conversion of Important Farmland to non-agricultural uses, the LESA model was prepared for the Project. The LESA model is composed of a Land Evaluation (LE) portion, which measures soil quality, and the Site Assessment (SA) portion, which evaluates other factors that contribute to the site's agricultural importance (e.g., parcel size and on-farm investments). A Final LESA Score of 0 to 39 points is not considered significant. A final score between 40 to 59 points is considered significant only if the LE and SA subscores are each greater than or equal to 20 points. A final score between 60 to 79 points is considered significant unless either the LE or SA subscore is less than 20 points. A final score between 80 to 100 points, however, is considered significant. The Project site achieved a Final LESA score of 56.7. According to the LESA model instructions described above, a final LESA score of 40 to 59 points is considered to be significant only if the LE and SA subscores are each greater than or equal to 20 points. The LE score

for the Project site was 31.2 and the SA score for the Project site was 25.5. Therefore, converting approximately 119 ac of Unique Farmland to a non-agricultural use would be considered a significant impact. The LESA model worksheets are provided in Appendix B.

The loss of Unique Farmland on the Project site would result in the decrease of Important Farmland inventory in both Orange County and the City of Lake Forest. In 2016, Orange County had an Important Farmland inventory of 5,715 ac, 2,913 ac of which were categorized as Unique Farmland. Implementation of the Project would convert 119.2 ac of Unique Farmland, which would result in a 2.1 percent decrease in the Important Farmland inventory of Orange County and a 4.1 percent decrease in the County's Unique Farmland inventory. In 2016, the City of Lake Forest had an Important Farmland inventory of 140.3 ac, 140.1 ac of which were categorized as Unique Farmland. Implementation of the Project would convert 119.2 ac of Unique Farmland, which would result in an 84.9 percent decrease in the Important Farmland inventory of the City and an 85 percent decrease in the City's Unique Farmland inventory. Once the land is converted to urban uses, the ability to use the land designated as Unique Farmland for future agricultural production would be lost. As noted above, the City's General Plan does not include agricultural land use designations nor do the four Citywide Theme proposed land use maps as identified in the recently prepared City of Lake Forest *Land Use Themes Report* (February 2019). As such, it can be assumed that the City recognizes and supports the notion that agricultural land within the City will be converted to non-agricultural land as the City builds out. Nevertheless, significance conclusions for this EIR are based on existing uses and conditions at the Project site. Therefore, given that a large percentage of the City's remaining agricultural land would be converted to a non-agricultural use with implementation of the proposed Project, and that this conversion would contribute to a depletion of Important Farmland inventory in both the County and the City, implementation of the proposed Project would result in a significant impact.

Mitigation measures were considered for the proposed Project in order to reduce the significant impact of converting the nursery on the Project site to non-agricultural uses; however, none of the mitigation measures were feasible. A discussion of the mitigation measures that were considered are discussed below in Section 4.2.9.

Threshold 4.2.2: Would the Project conflict with existing zoning or agricultural use, or a Williamson Act contract?

Less than Significant Impact. The City classifies the Project site as A1 – Agricultural District zoning. The A1 zoning classification was established in the City to provide for agriculture, outdoor recreational uses, and those low-intensity uses that have a predominantly open space character. This zone is also intended to be used as an interim zone in those areas the General Plan may designate for more intensive urban uses in the future. The existing City General Plan Land Use Element designates the Project site as BDO. The current use (retail nursery) occupying the Project site is consistent with the A1 zoning designation; however, the future use of the Project is not consistent with the A1 zoning classification. Given that the City's General Plan Land Use Element designates the future use of the Project site for a non-agricultural use, the Project site's zoning designation is an interim designation.

As part of the Project application process, the Project proponent is seeking a zoning classification amendment to change the zoning on the Project site from A1 to Planned Community District (PC). The zone change would require approval of the Project Area Plan, as well as the Nakase Property Supplemental Text and Development Plan.¹ Once the zone change is approved, the proposed use of the Project site would be consistent with the City's zoning classification as set forth in the City's Municipal Code, and impacts pertaining to conflicts with existing zoning would be less than significant.

The Project site is currently not under a Williamson Act contract. As such, implementation of the proposed Project would not conflict with a Williamson Act contract.

Threshold 4.2.5: Would the Project 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?

Less Than Significant Impact. No changes to the existing environment other than those analyzed as part of the proposed Project (e.g., planned community with a variety of uses and associated infrastructure) would result in the conversion of agricultural uses to non-agricultural uses. There are various parcels within the City that are currently under the A1– Agricultural District zoning classification. The A1 zoning classification allows for agricultural uses and recognizes such uses on these parcels as an interim zone in which the General Plan may designate more intensive urban uses in the future. The City also designates these specific A1 zone classified parcels as urban land uses under the General Plan Land Use Element. As such, the City anticipates that these parcels will eventually be developed with urban uses. Implementation of the proposed Project would not influence the conversion of agricultural uses to non-agricultural uses because these parcels have already been designated for conversion to urban uses through the City's General Plan. Impacts involving other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural uses would be less than significant.

4.2.7 Cumulative Impacts

The cumulative geographic study area for agricultural impacts is the City. Development of the proposed Project in combination with the related projects in the City (please refer to Chapter 4, Table 4.A of this EIR) has the potential to deplete the inventory of Important Farmland (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) in the City through the conversion of agricultural land to non-agriculture land.

According to the most current DOC FMMP data, in 2016, the City had 140.3 ac of Important Farmland. This acreage includes 0.2 acres of Prime Farmland, and 140.1 acres of Unique Farmland. The City of Lake Forest Opportunities Study Program EIR indicates that Important Farmland within the City will eventually be developed based on future approved land use designations. The loss of Important Farmland within the City is considered to be a significant cumulative impact.

¹ The Nakase Property Supplemental Text and Development Plan would be considered equivalent to the planned community text, specified in Section 9.111.050 of the City's Municipal Code

Table 4.A of this EIR provides a list of related Projects to be analyzed as part of the cumulative impact analysis. None of the related Projects provided in Table 4.A contain Important Farmland. Therefore, none of the related projects will convert Important Farmland to a non-agricultural use and thereby contribute to the reduction of Important Farmland inventory in the City. Implementation of the proposed Project would result in the conversion of 0.2 acre of Prime Farmland and 119.2 acres of Unique Farmland, which would reduce the total acreage of Important Farmland within the City. Because implementation of the Project would result in the conversion, and elimination, of a significant amount of Unique Farmland remaining in the City, the contribution of the proposed Project to the loss of Important Farmland would be cumulatively considerable. Consequently, the cumulative impact of the proposed Project on Unique Farmland would be significant and unavoidable.

There are no Williamson Act contracted lands in the City. Therefore, there are no Williamson Act contract lands associated with the related Projects. Furthermore, the proposed Project is not under a Williamson Act contract. Therefore, impacts on Williamson Act contract lands would be less than cumulatively considerable.

There are approximately 476 acres of land zoned for agricultural use in the City. The Project site is zoned for agricultural use; however, none of the related Projects are zoned for agricultural uses. Implementation of the proposed Project would reduce the amount of land zoned for agricultural use in the City (by 119.2 acres) through a rezone of the Project site to a non-agricultural zoning designation. Given that the existing zoning of the Project site is an interim zoning designation and project-related impacts associated with conflicts with agricultural zoning would be less than significant, and that the related Projects in the City are not zoned for agricultural use, impacts on agricultural zoning would be less than cumulatively considerable. Cumulative impacts of the proposed Project on agricultural zoned land would be less than significant.

The proposed Project would result in the conversion of agricultural land to non-agricultural land within the City. Once this land is converted, only 21 acres of agricultural land would remain in the City. The remaining 21 acres of land are not adjacent to or near the proposed Project site; as such, implementation of the proposed Project would not directly or indirectly influence the conversion of the remaining 21 acres of agricultural land to a non-agricultural use or involve other changes in the existing environment, which due to their location and nature, could result in the conversion of farmland to non-agricultural uses. The contribution of the proposed Project to the conversion of agricultural land to non-agricultural land would not be cumulatively considerable. As such, cumulative impacts of the proposed Project would be less than significant.

4.2.8 Level of Significance Prior to Mitigation

The conversion of 119.2 ac of Unique Farmland would be potentially significant. The proposed Project would conflict with the existing A1 – Agricultural District zoning but would not conflict with a Williamson Act contract. As noted above, as part of the Project application process, the Project proponent is seeking a zoning classification amendment to change the zoning on the Project site from A1 to PC. Likewise, impacts involving other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural uses would be

less than significant. A discussion of potential measures to mitigate for the loss of this agricultural resource is provided below.

4.2.9 Mitigation Measures

Implementation of the proposed Project would result in a significant impact from the conversion of 119.2 ac of Unique Farmland to a non-agricultural use. Mitigation measures such as paying in-lieu fees for agricultural conversion impacts were considered for this Project; however, this was determined infeasible as the City and County do not have programs where developers can pay in-lieu fees that apply towards agricultural conservation. The preservation of equivalent quality agricultural land on a 1:1 ratio within the City and County was also considered; however, this mitigation was considered infeasible due to the lack of land designated as Important Farmland within the City and County.

According to the FMMP, the City has a current inventory of 140.3 ac of Important Farmland (0.2 ac of Prime Farmland and 140.1 ac of Unique Farmland) within its jurisdiction. The 140.1 ac of Unique Farmland includes the 119.2 acres of Unique Farmland designated on the Project site; therefore, without the Project site accounted for in the City's Unique Farmland inventory, the City would only have 21 ac of Unique Farmland left within its jurisdiction. In order to mitigate at a 1:1 ratio, 119.2 ac of Unique Farmland would need to be set aside and preserved in perpetuity. The remaining 21 ac of Unique Farmland within the City would not be enough to provide adequate mitigation for the loss of Unique Farmland caused by implementation of the proposed Project. Preserving Unique Farmland at a 1:1 ratio within the City could not be used as a mitigation measure to reduce agricultural conversion impacts due to a lack of available appropriate land.

Areas outside the City's jurisdiction were also considered for conserving agricultural uses to reduce the impacts associated with the proposed Project. According to the FMMP, the County (in 2016) had a 5,715 ac inventory of Important Farmland, of which 2,931 ac were designated as Prime Farmland, 411 ac were designated as Farmland of Statewide Importance, and 2,913 ac were designated as Unique Farmland. Land use patterns in the County were reviewed using GIS applications and compared to the FMMP's Important Farmland categories, which shows that the majority of the land designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance in the County is entitled for urban development, is slated for future urban development, or is sparse and fragmented. Replacing the 119.2 ac of Unique Farmland on one contiguous similar size parcel would not be feasible. Replacing the 119.2 ac of Unique Farmland on one contiguous similar size parcel would not be feasible. Replacing agricultural uses within Orange County could not be used as a mitigation measure to reduce agricultural conversion impacts.

4.2.10 Level of Significance after Mitigation

As described above in Section 4.2.9, mitigation was considered to reduce the impact of the conversion of 119.2 ac of Unique Farmland to non-agricultural uses. The mitigation measures were not considered feasible; therefore, impacts pertaining to the conversion of Important Farmland to a non-agricultural use from implementation of the proposed project would be significant and unavoidable.

4.3 AIR QUALITY

This section discusses existing air quality, summarizes existing air quality regulations, and evaluates potential air quality impacts associated with the proposed Nakase Nursery/Toll Brothers Project (proposed Project). This section summarizes information provided in the *Air Quality Impact Analysis* (Urban Crossroads 2019a) and the *Nakase Elementary School Health Risk Assessment* (Placeworks 2019a) that were prepared for the proposed Project. The *Air Quality Impact Analysis* and *Nakase Elementary School Health Risk Assessment* are included in Appendix C of this Environmental Impact Report (EIR).

4.3.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Eight comment letters included comments related to air quality.

The letter from South Coast Air Quality Management District (SCAQMD) (August 15, 2018) recommended the use of the SCAQMD *CEQA Air Quality Handbook* (1993), use of CalEEMod, SCAQMD significance thresholds, and preparation of a Health Risk Assessment. Additionally, SCAQMD provided information about SCAQMD permits and data availability and suggested potential mitigation measures and consideration of potential alternatives to lessen impacts to air quality.

The letter from Saddleback Valley Unified School District (SVUSD) (July 25, 2018) expressed concern regarding the direct and indirect air quality impacts to SVUSD schools and suggested that a Health Risk Assessment be completed for the proposed Project. SVUSD also suggested that the Health Risk Assessment address potential health impacts related to emissions associated with State Route 241 (SR-241).

The letter from Loretta Herin (July 25, 2018) requests that a wall be constructed along Bake Parkway to reduce air pollution at adjacent residences. The letter from Richard Sullivan (July 25, 2018) expressed concerns with the worsening air quality in the neighborhoods of Barclay and Normandale. The letter from Sue Nath (July 30, 2018) expressed concern about additional vehicle emissions. The letter from Andrea Alexander (August 6, 2018) expressed concern with airborne matter resulting from traffic and its link to cancer risk. The letter from Judy Esposito (August 6, 2018) expressed concern about potential increases in air pollution. The letter from Robert and Melissa Leech (August 9, 2018) suggests that particulate matter (PM) and dust be sampled to determine health exposure risk.

4.3.2 Existing Environmental Setting

Lake Forest, which includes the Project site, is within the 6,745-square-mile (sq mi) South Coast Air Basin (Basin), which is under SCAQMD jurisdiction. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Background information about regional climate and air quality conditions in the Basin and local air quality conditions in the vicinity of the Project site are provided below.

4.3.2.1 Regional Climate

The distinctive climate of the Basin is determined by its terrain and geographical location. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter.

The annual average temperatures throughout the Basin vary from the low to middle 60s (degrees Fahrenheit [°F]). Due to a decreased marine influence, the eastern portion of the Basin shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the Basin, with average minimum temperatures ranging from 47°F in downtown Los Angeles to 36°F in San Bernardino. All portions of the Basin have recorded maximum temperatures above 100°F.

Although the climate of the Basin can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer (a shallow layer of sea air). The annual average relative humidity within the Basin is 71 percent along the coast and 59 percent inland. The marine layer is an important modifier of climate in the Basin. Humidity restricts visibility in the Basin, and the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of the Basin's rainfall occurs from November through April. The annual average rainfall varies from approximately 9 inches in Riverside to 14 inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the Basin, with frequency being higher near the coast.

Due to its generally clear weather, approximately 75 percent of available sunshine is received in the Basin. The remaining approximately 25 percent is absorbed by clouds. On the shortest and longest days of the year, there are approximately 10 hours and 14.5 hours of possible sunshine, respectively. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions.

Wind patterns across the south coastal region of the Basin, which is where the Project site is located, are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

The direction and speed of the wind determines the horizontal dispersion and transport of air pollutants within the Basin. During the late autumn to early spring rainy season, winds blow from the northwest from storms moving through the region. During this time, 5 to 10 periods of strong, dry offshore winds, locally termed "Santa Ana Winds", occur each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, characterized by a daytime onshore sea breeze and a nighttime offshore wind. Summer

wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime offshore winds begin with the radiational cooling of the mountain slopes. Heavy, cool air descends down the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the Basin is the “Catalina Eddy”, a low-level cyclonic (counterclockwise) flow centered over Santa Catalina Island that results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal areas.

In the Basin, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing, which effectively acts as an impervious lid to pollutants over the entire Basin. The mixing height for the inversion structure is normally around 1,000 to 1,500 feet (ft) above mean sea level (amsl).

A second inversion type forms in conjunction with cool air flowing from the surrounding mountains at night, followed by the seaward drift of this pool of cool air. The top of this cooler layer forms a sharp boundary with the warmer upper layer and creates nocturnal radiation inversions. The inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. The inversions typically occur only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as oxides of nitrogen (NO_x) and carbon monoxide (CO) from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

4.3.2.2 Criteria Pollutants

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

- **Carbon Monoxide (CO):** CO is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels (e.g., gasoline or wood). CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Health effects of CO exposure include chest pain with exercise and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. Individuals most at risk include fetuses,

patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

- **Sulfur Dioxide (SO₂):** SO₂ is a colorless, extremely irritating gas or liquid. It enters the atmosphere primarily from the burning of high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. When SO₂ oxidizes in the atmosphere, it forms sulfates (SO₄). Collectively, these pollutants are referred to as oxides of sulfur (SO_x). A few minutes of exposure to low levels of SO₂ can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, an increase in resistance to air flow as well as a reduction in breathing capacity leading to severe breathing difficulties are observed after acute exposure to SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂.
- **Oxides of Nitrogen (NO_x):** NO_x consist of nitric oxide (NO), nitrogen dioxide (NO₂) and nitrous oxide (N₂O) and are formed when nitrogen (N₂) combines with oxygen (O₂). Their lifespan in the atmosphere ranges from 1 to 7 days for NO and NO₂ and to 170 years for N₂O. NO_x are typically created during combustion processes and are major contributors to smog formation and acid deposition. Of the seven types of NO_x compounds, NO₂ is the most abundant in the atmosphere. NO₂ absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Because ambient concentrations of NO₂ are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO₂ than those indicated by regional monitors. An increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO₂ at levels found in homes with gas stoves that are higher than ambient levels found in Southern California. An increase in resistance to air flow and airway contraction is observed after short-term exposure to NO₂ in healthy individuals. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) because they are more susceptible to NO₂ effects than healthy individuals.
- **Ozone (O₃):** O₃ is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and NO_x, both of which are byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O₃ concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Individuals exercising outdoors, children, and people with preexisting lung disease (e.g., asthma and chronic pulmonary lung disease) are the most susceptible to O₃ effects.
- **Particulate Matter Less Than 10 Microns in Size (PM₁₀):** PM₁₀ consists of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inch or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM₁₀ also causes visibility reduction. A consistent correlation between elevated ambient coarse particulate matter levels and an increase in

mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. The elderly, people with pre-existing respiratory or cardiovascular disease, and children are more susceptible than adults to the effects of high levels of PM₁₀.

- **Particulate Matter Less Than 2.5 Microns in Size (PM_{2.5}):** PM_{2.5} consists of tiny solid or liquid particles that are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO₂ release from power plants and industrial facilities and nitrates formed from NO_x release from power plants, automobiles, and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. In addition to the health effects of PM₁₀, discussed above, daily fluctuations in PM_{2.5} concentration levels have been related to hospital admissions for acute respiratory conditions in children, school and kindergarten absences, decreased lung growth and respiratory volumes in children, and increased medication use in children and adults with asthma. The elderly, people with pre-existing respiratory or cardiovascular disease, and children are more susceptible to the effects of high levels of PM_{2.5}.
- **Lead (Pb):** Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence. Lead can be stored in the bone from early-age environmental exposure, and elevated lead levels in blood can occur due to a breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of their mothers being previously exposed to lead. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death; however, it appears that lead has no direct effect on the respiratory system.
- **Volatile Organic Compounds (VOCs) and Reactive Organic Gases (ROG):** VOCs are hydrocarbon compounds (i.e., any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity (i.e., they do not react at the same speed or do not form O₃ to the same extent when exposed to photochemical processes). VOCs often have an odor (e.g., gasoline, alcohol, and the solvents used in paints). Exceptions to the VOC designation include: CO, carbon dioxide (CO₂), carbonic acid, metallic carbides or carbonates, and ammonium carbonate. Similar to VOCs, ROGs are also precursors in forming O₃ and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is

formed when ROG_s and NO_x react in the presence of sunlight. The SCAQMD uses the terms VOC and ROG interchangeably. VOCs and ROG_s are considered criteria pollutants since they are a precursor to O₃, which is a criteria pollutant. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs and ROG_s that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

4.3.2.3 Regional Air Quality

As discussed in further detail later in Section 4.3.3, Regulatory Setting, both the State of California and the federal government have established health-based ambient air quality standards (AAQS) for the criteria air pollutants. Areas that meet the AAQS are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas.

The SCAQMD monitors levels of various criteria pollutants at 38 permanent monitoring stations and 5 single-pollutant-source lead (Pb) air monitoring sites throughout the air district. Data collected at these stations are used by the California Air Resources Board (CARB) and United States Environmental Protection Agency (EPA) to classify air basins as attainment, nonattainment, maintenance, or unclassified, based on air quality data for the most recent 3 calendar years compared with the AAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards.

In 2015, the federal and State AAQS (national ambient air quality standards [NAAQS] and California ambient air quality standards [CAAQS], respectively) were exceeded on 1 or more days for O₃, PM₁₀, and PM_{2.5} at most monitoring locations. No areas of the Basin exceeded federal or State standards for NO₂, SO₂, CO, sulfates, or lead. See Table 4.3.A for the status of criteria pollutants in the Basin. For the NAAQS, the Basin is in nonattainment for O₃ (1-hour and 8-hour), PM_{2.5}, and partial nonattainment for lead (Los Angeles County only). For the CAAQS, the Basin is in nonattainment for O₃ (1 hour and 8 hour), PM_{2.5}, and PM₁₀.

Table 4.3.A: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Criteria Pollutant	State Designations	Federal Designations
Ozone – 1 hour standard	Nonattainment	Nonattainment (Extreme)
Ozone – 8 hour standard	Nonattainment	Nonattainment (Extreme)
PM ₁₀	Nonattainment	Attainment (Maintenance)
PM _{2.5}	Nonattainment	Nonattainment (Serious)
Carbon Monoxide	Attainment	Attainment (Maintenance)
Nitrogen Dioxide	Attainment	Unclassifiable/Attainment
Sulfur Dioxide	Attainment	Unclassifiable/Attainment
Lead	Attainment	Nonattainment (Partial) ¹

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

¹ The partial nonattainment designation applies to the Los Angeles County portion of the South Coast Air Basin only for near-source monitors.

PM₁₀ = particulate matter less than 10 microns in size

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

4.3.2.4 Local Air Quality

Relative to the Project site, the nearest long-term air quality monitoring site for O₃, CO, PM₁₀, and PM_{2.5} is the Saddleback Valley Monitoring Station (State Responsibility Area [SRA] 19), which is located approximately 2.05 miles (mi) south of the Project site in Lake Forest. The nearest long-term air quality monitoring site for NO₂ is the North Coastal Orange County Monitoring Station (SRA 18), which is located approximately 14.5 mi west of the Project site in Costa Mesa.

The most recent 3 years of data available (i.e., 2015, 2016, and 2017) at the monitoring stations is shown in Table 2-4 of the *Air Quality Impact Analysis* (Urban Crossroads 2019a). Table 2-4 of the *Air Quality Impact Analysis* also identifies the number of days AAQS were exceeded at the monitoring stations, which is considered to be representative of the local air quality at the Project site. Within the 3-year period monitored, O₃ concentrations exceeded the federal 1-hour standard on 10 days, the State 1-hour standard on 48 days, and the State 8-hour standard on 46 days. There were no exceedances of the federal 8-hour standard for O₃, for the State or federal 1-hour standards for NO₂, the federal 24-hour standard for PM₁₀, or the federal 24-hour standard for PM_{2.5} during the 3-year period.

4.3.2.5 Sensitive Receivers

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, individuals with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather to exercise are defined as “sensitive receptors”. Sensitive receptors near the Project site include existing residential homes, hotels, and the existing Serrano Creek Trail area. The existing sensitive receptors in the vicinity of the project site are shown on Figure 4.12.1 and are described below.

- **Receptor R1:** Represents residential homes located approximately 197 ft north of the Project site across Bake Parkway.¹
- **Receptor R2:** Represents the Staybridge Suites hotel, which is located approximately 264 ft north of the Project site across Bake Parkway.
- **Receptor R3:** Represents the Extended Stay America hotel, which is located approximately 216 ft southeast of the Project site on Lake Forest Drive.
- **Receptor R4:** Represents the Serrano Creek Trail, which is located approximately 80 ft southeast of and adjacent to the southern Project site boundary.

¹ The residential homes at R1 represent the nearest sensitive receivers to the Project site where an individual can remain for 24 hours.

4.3.2.6 Existing Project Site Emissions

The Project site is developed with a nursery. The estimated operation-source emissions generated by the existing nursery are summarized in Table 4.3.B. The existing operational emissions on the Project site from the nursery do not currently exceed SCAQMD maximum daily emissions thresholds (summarized later in Section 4.3.5, Thresholds of Significance).

Table 4.3.B: Existing Project Site Emissions

Existing Operational Activities	Maximum Daily Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Nursery	0.89	3.21	10.53	0.04	3.16	3.16

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = oxides of nitrogen

PM₁₀ = particulate matter less than 10 microns in size

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

SO_x = oxides of sulfur

VOC = volatile organic compounds

4.3.3 Regulatory Setting

4.3.3.1 Federal Regulations

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

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the criteria pollutants. The NAAQS were amended in July 1997 to include an additional standard for O₃ and to adopt an NAAQS for PM_{2.5}. The NAAQS are summarized in Table 4.3.C. All air basins have been formally designated as attainment or non-attainment for each NAAQS. The NAAQS attainment status for the Basin was previously summarized in Table 4.3.A.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner-burning gasoline and other cleaner-burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_x.

Table 4.3.C: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)		
Respirable Particulate Matter (PM ₁₀) ⁹	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		—		
Fine Particulate Matter (PM _{2.5}) ⁹	24-Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	—	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		—	—	
Nitrogen Dioxide (NO ₂) ¹⁰	1-Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		53 ppb (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹¹	1-Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	—		—	0.5 ppm (1300 µg/m ³)	
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas) ¹¹	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) ¹¹	—	
Lead ^{12,13}	30-Day Average	1.5 µg/m ³	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ¹³	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m ³		
Visibility- Reducing Particles ¹⁴	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	National Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a)
The footnotes for this table are provided on the following page.

Footnotes:

- ¹ California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, 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 ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once per year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent measurement method which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
- ⁸ On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- ⁹ On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- ¹⁰ To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
- ¹¹ On June 2, 2010, the new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that 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.
- ¹² The CARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ¹³ The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.
- ¹⁴ In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius

µg/m³ = micrograms per cubic meter

CARB = California Air Resources Board

EPA = United States Environmental Protection Agency

mg/m³ = milligrams per cubic meter

ppb = parts per billion

ppm = parts per million

The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

4.3.3.2 State Regulations

California Ambient Air Quality Standards. Assembly Bill (AB) 2595, the California Clean Air Act (CCAA), was signed into law in 1988 and requires all areas of the State to achieve and maintain the CAAQS. The CCAA mandates achievement of the maximum degree of emission reductions possible from vehicular and other mobile sources in order to attain the CAAQS by the earliest practical date. The CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the CCAA and federal CAA and for regulating emissions from consumer products and motor vehicles within California. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However, at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the Basin because they are not considered to be a regional air quality problem. The CAAQS are summarized in Table 4.3.C. Generally, the CAAQS are more stringent than the NAAQS. All air basins have been formally designated as attainment or non-attainment for each CAAQS. The CAAQS attainment status for the Basin were previously summarized in Table 4.3.A.

Non-attainment areas are required to prepare Air Quality Management Plans (AQMPs) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

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

4.3.3.3 Regional Regulations

Air Quality Management Planning. Together, the SCAQMD and CARB are responsible for ensuring compliance with all State and federal air quality standards within the Basin. In order to meet the CAAQS and NAAQS, the SCAQMD has adopted a series of AQMPs. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In March 2017, SCAQMD released the Final 2016 AQMP. The 2016 AQMP evaluates current integrated strategies and control measures to meet the NAAQS, as well as exploring new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, State, and local levels. The 2016 AQMP incorporates scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and updated emission inventory methodologies for various source categories.

4.3.3.4 Local Regulations

City of Lake Forest General Plan. While air quality is not a State-mandated element of a general plan, the AQMP requires air quality to be addressed in general plans. Air quality is included as a sub-element of the Recreation and Resources Element of the City of Lake Forest General Plan (2015a) to fulfill AQMP requirements. The purpose of the air quality sub-element is to reduce pollutant levels through stationary source, mobile source, transportation and land use control measures, and energy conservation measures. The Recreation and Resources Element contains the following goals and policies aimed at improving air quality within the City through proper planning for land use, transportation, and energy use.

GOAL 7.0: Improvement of air quality.

Policy 7.1: 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 7.2: Cooperate and participate in regional air quality management planning, programs and enforcement measures.

Policy 7.3: Utilize transportation demand management to influence transportation choices related to mode and time of travel.

Policy 7.4: Implement Citywide traffic flow improvements

Policy 7.5: Implement land use policy aimed at achieving a greater balance between jobs and housing in Lake Forest.

Policy 7.6: Integrate air quality planning with land use and transportation planning.

Policy 7.7: Promote energy conservation and recycling by the public and private sector in Lake Forest.

4.3.4 Methodology

Evaluation of the Project's air quality impacts included the following:

- Determination of the short-term construction air quality impacts
- Determination of the long-term air quality impacts resulting from emissions from vehicular traffic and stationary sources
- Determination of regulatory compliance measures required to reduce short- and long-term air quality impacts from all sources
- Comparison of Project-related construction and operational emissions with applicable thresholds (summarized in Section 4.3.5, Significance Thresholds)
- Evaluation of health risk from vehicle emissions for students and staff at the proposed school

The evaluation of air quality impacts was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the SCAQMD *CEQA Air Quality Handbook* (1993), *Final Localized Threshold Methodology* (2003), and the *Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds* (2006). The latest version of the CalEEMod (v2016.3.2), which was released by the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts on October 17, 2017, was used to determine construction and operational air quality emissions of the proposed Project. Please refer to the *Air Quality Impact Analysis* (Urban Crossroads 2019a) for additional details on the air quality modeling methodology and assumptions used to estimate construction and operation emissions of the proposed Project.

The Health Risk Assessment and dispersions modeling for evaluation of health risk impacts to students and staff at the proposed school was conducted in compliance with the procedures developed by the EPA (i.e., the 2005 *Guideline on Air Quality Models*) and the Office of Environmental Health Hazard Assessment (OEHHA) (i.e., 2015 *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*). The air quality dispersion modeling was performed using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Because the proposed school would not be operational during construction of the proposed Project, the health risk assessment was only conducted for the operational phase of the proposed Project. Please refer to the *Nakase Elementary School Health Risk Assessment* (Placeworks 2019a) for additional details on the air quality modeling methodology and assumptions used to estimate health risk to students and staff at the proposed school.

4.3.5 Thresholds of Significance

4.3.5.1 CEQA Thresholds of Significance

The thresholds for air quality impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City of Lake Forest *CEQA Significance Thresholds Guide* (2009). The proposed Project may be deemed to have a significant air quality impact if it would:

Threshold 4.3.1: Conflict with or obstruct implementation of the applicable air quality plan;

Threshold 4.3.2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;

Threshold 4.3.3: Expose sensitive receptors to substantial pollutant concentrations;

Threshold 4.3.4: Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

The Initial Study, included as Appendix A, substantiates that impacts associated with Threshold 4.3.4 (odors and other emission) would be less than significant because odors during construction would be temporary and the uses associated with the operation of the proposed Project would not generate objectionable odors. This threshold will not be addressed in the following analysis.

4.3.5.2 SCAQMD Emissions Thresholds

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

- **Regional Significance Thresholds:** The SCAQMD regional significance thresholds for regulated pollutants are shown in Table 4.3.D. Pursuant to SCAQMD guidelines, these thresholds of significance are used to assess the impacts of project-related construction and operational emissions on regional and local ambient air quality. According to SCAQMD guidelines, any projects with daily emissions that exceed the regional thresholds of significance should be considered as having an individually and cumulatively significant air quality impact.
- **Localized Significance Thresholds (LSTs):** The SCAQMD has established LSTs to evaluate whether there is potential for a project to contribute to, or cause, localized exceedances of the NAAQS or CAAQS. LSTs are based on the ambient concentrations of that pollutant within the project area and the distance to the nearest sensitive receptor. The LSTs for the proposed Project are shown in Table 4.3.D.¹

¹ Since development projects typically result in negligible construction and long-term operation SO₂ emissions, SCAQMD does not provide an LST for this pollutant. There is also no ambient standard or SCAQMD LST for VOCs, since VOCs are not a criteria pollutant. VOCs are classified as a precursor pollutant, and only a regional emissions threshold has been established.

Table 4.3.D: SCAQMD Maximum Daily Emissions Thresholds

Pollutant	Construction (lbs/day)	Operation (lbs/day)
Regional Threshold		
NO _x	100	55
VOC	75	55
PM ₁₀	150	150
PM _{2.5}	55	55
SO _x	150	150
CO	550	550
Pb	3	3
Local Threshold		
NO _x	96 (demolition); 150 (grading)	N/A
CO	914 (demolition); 1,626 (grading)	N/A
PM ₁₀	14 (demolition); 27 (grading)	N/A
PM _{2.5}	5 (demolition); 9 (grading)	N/A

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CO = carbon monoxide

lbs/day = pounds per day

N/A = not applicable

NO_x = oxides of nitrogen

Pb = lead

PM₁₀ = particulate matter less than 10 microns in size

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

SO_x = oxides of sulfur

VOC = volatile organic compounds

The significance of localized emissions impacts depends on whether ambient levels in the vicinity of a project site are above or below State standards. If ambient levels are below the standards, as in the case of CO and NO₂, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, as in the case of PM_{2.5} and PM₁₀, then project emissions are considered significant if they increase ambient concentrations by a measurable amount.

- Health Risk Assessment Thresholds:** Carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). Any exposure, therefore, would have some associated risk. The SCAQMD has established a maximum incremental cancer risk of 10 in 1 million (1x10⁵) for CEQA projects and the OEHHA has established a typical risk management level of 10 in 1 million.

The cumulative non-cancer chronic health impacts from vehicle emissions were determined by calculating the Hazard Index (HI), which is the sum of all hazard quotients from all the substances that affect the same organ system (e.g., respiratory system, cardiovascular system, reproductive system). An HI equal to or greater than 1.0 represents a significant chronic or acute health hazard.

4.3.6 Project Impacts

Threshold 4.3.1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. Chapter 12, Sections 12.2 and 12.3 of the SCAQMD *CEQA Air Quality Handbook* (1993) outlines criteria for determining consistency with the SCAG 2016 AQMP. A project would be consistent with the AQMP if the project (1) would not increase the frequency or severity of an existing air quality violation or cause or contribute to new a new violation or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP, and (2) would not exceed the growth assumptions in the AQMP based on the year of Project build out.

As described further under Threshold 4.3.2 below, the short-term construction and long-term pollutant emissions from the proposed Project would not exceed the regional emissions thresholds established by the SCAQMD. Therefore, the proposed Project would not increase the frequency or severity of any air quality standard violation or cause a new air quality standard violation.

The City’s General Plan designates the Project site as Business Park and Business Development Overlay (BDO). This land use designation provides opportunities for a mixture of all uses allowed under the Commercial, Professional Office, and Light Industrial land use designations. Such uses include a variety of retail, professional office, service-oriented business activities, administrative and corporate uses, and light industrial uses. Development of the proposed Project consists of approximately 675 single-family detached residential homes, 101 senior affordable housing residential units, an elementary school that could accommodate up to 1,000 students, and park/open space uses. The proposed Project would require approval of a General Plan amendment to change the General Plan land use designation of the Project site to Low-Medium Residential and Institutional. According to the *Nakase Property Trip Generation Evaluation* (Urban Crossroads 2018), the currently adopted General Plan land use for the Project site would generate 14,122 more trip-ends per day than the proposed Project. Therefore, as shown in Table 4.3.E, the Project would result in a net decrease in VOCs, NO_x, CO, SO_x, PM₁₀, and PM_{2.5} compared to the adopted General Plan land use designation, which was used for the growth assumption in the 2016 AQMP. Therefore, the proposed Project would result in fewer emissions, and consequently less air quality impacts, compared to the currently adopted general plan land use designation.

Table 4.3.E: Project and Current Permitted Land Uses – Operational Emissions

Proposed Use	Operational Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Currently Approved General Plan Land Use	73.62	156.96	424.24	1.82	166.26	45.63
Proposed Project	44.66	54.08	201.87	0.65	58.41	15.44
Net Change	-28.96	-102.88	-222.37	-1.16	-107.85	-30.19

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = oxides of nitrogen

PM₁₀ = particulate matter less than 10 microns in size

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

SO_x = oxides of sulfur

VOC = volatile organic compounds

The proposed Project would not exceed the growth assumptions in the SCAG 2016 AQMP because (1) the Project's construction and operational emissions would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations, and (2) although the proposed Project is not consistent with the current General Plan land use designation on the Project site, the proposed Project is expected to generate a net decrease in emissions as compared to the uses allowed under the current land use designation, which was used for the growth assumption in the 2016 AQMP. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant, and no mitigation is required.

Threshold 4.3.2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact.

Construction. Construction activities that produce emissions include demolition, grading, infrastructure construction, building construction, paving, and architectural coating. Combustion emissions are produced from various sources, including construction equipment engines and motor vehicles transporting the construction crew and construction materials. Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as grading operations. Construction activities such as paving and painting can release VOCs. Construction emissions would vary daily as construction activity levels change; therefore, this analysis provides the worst-case construction emissions based on the construction schedule and construction equipment anticipated for Project construction.

As specified in Regulatory Compliance Measures RCM AQ-1 and RCM AQ-2, in Section 4.3.8, Regulatory Compliance Measures and Mitigation Measures, construction of the proposed Project would comply with SCAQMD standard conditions, including Rule 403 (Fugitive Dust) to control fugitive dust and Rule 1113 (Architectural Coatings) to control VOC emissions from paint. Compliance with SCAQMD standard conditions are regulatory requirements and were considered in the analysis of construction emissions. The maximum daily emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5} that would result from construction of the proposed Project are summarized in Table 4.3.F and compared to the SCAQMD regional significance thresholds. As shown in Table 4.3.F, construction emissions associated with the proposed Project would not exceed the significance thresholds established by the SCAQMD for any of the criteria pollutants.

As previously discussed, the portion of the Basin in which the Project site is located is in nonattainment of the NAAQS for O₃ (1-hour and 8-hour) and PM_{2.5}. The Basin is in nonattainment of the CAAQS for O₃ (1-hour and 8-hour), PM_{2.5}, and PM₁₀. As shown in Table 4.3.F, emissions from construction of the proposed Project would not exceed the significance thresholds for O₃, PM_{2.5}, or PM₁₀. Therefore, construction of the proposed Project would not exceed the significance thresholds of criteria pollutants for which the project region is nonattainment under the CAAQS or NAAQS.

Table 4.3.F: Construction Emissions

Year	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2019	3.64	37.67	23.02	0.05	3.45	1.96
2020	50.8	69.66	37.66	0.12	12.53	6.09
2021	20.41	90.40	77.76	0.24	19.56	7.68
2022	19.19	79.16	73.84	0.24	15.92	6.06
2023	15.42	38.13	51.12	0.19	13.95	4.38
2024	15.11	36.60	49.17	0.19	13.84	4.28
2025	14.83	35.05	47.48	0.18	13.73	4.17
Maximum Daily Emissions	20.41	90.40	77.76	0.24	19.56	7.68
SCAQMD Regional Thresholds	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = oxides of nitrogen

PM₁₀ = particulate matter less than 10 microns in size

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

SCAQMD = South Coast Air Quality Management District

SO_x = oxides of sulfur

VOC = volatile organic compounds

According to SCAQMD guidance, projects that exceed the significance thresholds are considered by SCAQMD to result in cumulatively considerable air quality impacts. Conversely, projects that do not exceed the significance thresholds are generally not considered to result in cumulatively considerable air quality impacts. Therefore, based on the fact that emissions during construction of the proposed Project would not exceed any of the air quality significance thresholds for any criteria pollutants, the proposed Project would not have a cumulatively considerable air quality impact. Therefore, with compliance with regulatory requirements (as specified in RCM AQ-1 and RCM AQ-2), construction impacts related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable NAAQS or CAAQS would be less than significant, and no mitigation is required.

Operation. Project operations would result in VOC, NO_x, SO_x, CO, PM₁₀, and PM_{2.5} emissions from three primary sources: area source emissions, energy source emissions, and mobile source emissions, as described further below.

Area source emissions would be generated from the following sources:

- **Architectural Coating:** Over a period of time, the buildings that are part of the proposed Project would generate emissions from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings used during maintenance activities.
- **Consumer Products:** Consumer products include but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. When released in the atmosphere, many of these products contain organic compounds that can react to form O₃ and other photochemically reactive pollutants.

- **Landscape Maintenance Equipment:** Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers used to maintain landscaping.

In compliance with RCM AQ-3, the proposed Project would comply with SCAQMD Rule 445, which prohibits the use of wood-burning stoves and fireplaces in new development. Therefore, the proposed Project would not generate area source emissions from hearths/fireplaces.

Energy source emissions include criteria pollutant emissions from the generation of electricity and consumption of natural gas. However, because electricity-generating facilities for the Project area are located either outside the region (State) or are offset through the use of pollution credits (Regional Clear Air Incentives Market [RECLAIM]) for generation within the Basin, criteria pollutant emissions from off-site electricity generation is generally excluded from the evaluation of significance, and only natural gas use is considered. As specified in RCM AQ-4, the project building components (e.g., windows, roof systems, electrical and lighting systems, and heating, ventilation, and air conditioning systems) would be designed in compliance with 2019 Title 24 standards. Title 24 requires projects to implement energy efficiency measures that promote conservation. The 2019 Title 24 standards anticipate 30 percent less energy use for non-residential buildings and 53 percent less energy use for residential use due to lighting upgrades. Additionally, to reduce water demands and associated energy use, developments within the Area Plan would be required to implement a Water Conservation Strategy, install water-efficient plumbing fixtures, and demonstrate a minimum 20 percent reduction in indoor and outdoor water usage compared to the development without water conservation measures.

Project vehicle trips to and from the Project site would generate mobile source emissions. Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust and tire wear particulates. Mobile source emissions are dependent on both overall daily vehicle trip generation and the effect of the Project on peak-hour traffic volumes and traffic operations in the vicinity of the Project site. The Project-related operational air quality emissions are primarily due to vehicle trips. According to the *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c), the proposed Project is anticipated to generate a total of 8,789 trip ends per day with 1,202 a.m. peak-hour trips and 879 p.m. peak-hour trips. The proposed Project design would facilitate pedestrian access and encourages people to walk instead of drive, which reduces vehicle trips. Pedestrian connections would be constructed at selected roads within the Project site, providing pedestrian access to the various uses and activity centers within the Project. Furthermore, the proximity of the residential uses within the Area Plan to the proposed on-site school and to the surrounding commercial uses would reduce travel distances and regional vehicle miles traveled (VMT) by consolidating trips and reducing requirements for multiple trips. The proposed Project would also provide Below Market Rate (BMR) housing through the construction of senior housing dwelling units. Senior housing units tend to be associated with lower levels of auto ownership.

Table 4.3.G summarizes the Project’s maximum daily emissions from area, energy, and mobile sources during operation with implementation of RCM AQ-3 and RCM AQ-4 and consideration of the project design features discussed above. The existing emissions from the on-site nursery were subtracted from the Project operational emissions to determine the new emissions resulting from the proposed Project. As shown in Table 4.3.G, emissions during operation of the proposed Project would not exceed the thresholds of significance for any criteria pollutants.

Table 4.3.G: Operations Emissions

Year		Emissions (lbs/day)					
		VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	Residential	31.74	13.61	69.44	0.09	1.40	1.40
	Other Uses	2.26	0.00	0.10	0.00	0.00	0.00
Energy Source	Residential	0.33	2.79	1.19	0.02	0.23	0.23
	Other Uses	0.02	0.19	0.16	0.00	0.01	0.01
Mobile Source	Residential	8.04	28.62	103.75	0.43	44.07	11.98
	Other Uses	2.38	8.42	30.11	0.13	12.70	3.45
Maximum Daily Emissions		44.76	53.64	204.75	0.66	58.41	17.07
Existing Emissions		-0.89	-3.10	-10.53	-0.04	-3.16	-0.87
Net Maximum Daily Emissions (Project minus Existing)		43.87	50.54	194.22	0.63	55.25	16.20
SCAQMD Regional Thresholds		55	55	550	150	150	55
Threshold Exceeded?		NO	NO	NO	NO	NO	NO

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

Note: Any discrepancies in the Maximum Daily Emissions, Existing Emissions, and Net Maximum Daily Emission rows are due to rounding.

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

PM_{2.5} = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_x = oxides of sulfur
VOC = volatile organic compounds

PM₁₀ = particulate matter less than 10 microns in size

As previously discussed, the portion of the Basin in which the Project site is located is in nonattainment of the NAAQS for O₃ (1-hour and 8-hour) and PM_{2.5}. The Basin is in nonattainment of the CAAQS for O₃ (1-hour and 8-hour), PM_{2.5}, and PM₁₀. As shown in Table 4.3.G, emissions during operation of the proposed Project would not exceed the significance thresholds for O₃, PM_{2.5}, or PM₁₀. Therefore, operation of the proposed Project would not exceed the significance thresholds of criteria pollutants for which the project region is nonattainment under the CAAQS or NAAQS.

As discussed previously, according to SCAQMD guidance, projects that exceed the significance thresholds are considered by the SCAQMD to result in cumulatively considerable air quality impacts. Conversely, projects that do not exceed the significance thresholds are generally not considered to result in cumulatively considerable air quality impacts. Therefore, based on the fact that the emissions during operation of proposed Project would not exceed any of the air quality significance thresholds for any criteria pollutants, the proposed Project would not have a cumulatively considerable impact. Therefore, with compliance with regulatory requirements (as specified in RCM AQ-3 and RCM AQ-4), operational impacts related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS would be less than significant, and no mitigation is required.

Threshold 4.3.3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

Construction. Construction activities (e.g., grading and the use of construction equipment on site) would result in localized exhaust emissions that have the potential to affect nearby sensitive receivers. The localized impacts from the daily emissions associated with on-site construction activities were evaluated at Receptor R1.¹

As specified in RCM AQ-1, in Section 4.3.8, Regulatory Compliance Measures and Mitigation Measures, construction of the proposed Project would comply with SCAQMD standard conditions, including Rule 403 (Fugitive Dust) to control fugitive dust. Compliance with SCAQMD standard conditions are regulatory requirements and were considered in the analysis of construction emissions. Table 4.3.H identifies the localized impacts at the nearest receptor location to the Project site (R1) compared to the SCAQMD LSTs for NO_x, CO, PM₁₀, and PM_{2.5}. As shown in Table 4.3.H, construction emissions associated with the proposed Project would not exceed the LSTs established by SCAQMD. Because the project would not exceed the LSTs with compliance with regulatory requirements (as specified in RCM AQ-1), impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant, and no mitigation is required.

Table 4.3.H: Localized Construction Emissions

	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
On-Site Demolition Activities				
Maximum Daily Emissions	35.78	22.06	3.12	1.87
SCAQMD Localized Significance Threshold	96	914	14	5
Threshold Exceeded?	NO	NO	NO	NO
On-Site Grading Activities				
Maximum Daily Emissions	50.20	31.96	10.91	5.61
SCAQMD Localized Significance Threshold	150	1,626	27	9
Threshold Exceeded?	NO	NO	NO	NO

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CO = carbon monoxide

PM₁₀ = particulate matter less than 10 microns in size

lbs/day = pounds per day

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

NO_x = oxides of nitrogen

SCAQMD = South Coast Air Quality Management District

Operation.

Localized Emissions. A project would generate localized exhaust emissions that have the potential to affect nearby sensitive receivers if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g.,

¹ The residential homes at R1 represent the nearest sensitive receivers to the Project site where an individual can remain for 24 hours.

warehouse or transfer facilities). Although the proposed Project does not include such uses, the Project is expected to produce periods of mobile queuing and idling at the school. The localized impacts from the daily emissions associated with trips to and from the proposed school and vehicle idling at the school were evaluated at Receptor R1.¹ Table 4.3.I shows the maximum daily emissions for the Project’s operational activities compared with the SCAQMD LSTs for NO_x, CO, PM₁₀ and PM_{2.5}. As shown in Table 4.3.I, project operational source emissions would not exceed LSTs established by the SCAQMD. Therefore, because the project would not exceed the LSTs established by the SCAQMD, localized emissions from operation of the proposed Project would not expose sensitive receptors to substantial pollutant concentrations, impacts would be less than significant, and no mitigation is required.

Table 4.3.I: Localized Operations Emissions

	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
On-Site Demolition Activities				
Maximum Daily Emissions	18.47	77.44	4.48	2.41
SCAQMD Localized Significance Threshold	191	2,235	10	3
Threshold Exceeded?	NO	NO	NO	NO

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CO = carbon monoxide

PM₁₀ = particulate matter less than 10 microns in size

lbs/day = pounds per day

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

NO_x = oxides of nitrogen

SCAQMD = South Coast Air Quality Management District

CO Hot Spot. CO hot spots are caused by vehicular emissions, primarily when idling at congested intersections. Based on the analysis presented below, a CO “hot-spot” analysis is not needed to determine whether a change in the level of service (LOS) of an intersection in the vicinity of the Project site would have the potential to result in exceedance of either the CAAQS or NAAQS.

Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the Basin is now designated as attainment. In addition, CO concentrations in the Project vicinity have steadily declined.

The analysis prepared for CO attainment in the Basin by SCAQMD can be used to assist in evaluating the potential for CO exceedances in the Basin. To establish a more accurate record of baseline CO concentrations affecting the Basin, a CO “hot-spot” analysis was conducted by SCAQMD in 2003 for four busy intersections in Los Angeles at the peak

¹ The residential homes at R1 represent the nearest sensitive receivers to the Project site where an individual can remain for 24 hours.

morning and afternoon time periods. This analysis did not predict any violation of CO standards. According to the *Air Quality Impact Analysis* (Urban Crossroads 2019a), based on the SCAQMD 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak CO concentrations in the Basin were a result of unusual meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. Even if the traffic volumes of the proposed Project were double or triple that of the traffic volumes generated at the four busy intersections in Los Angeles, coupled with the ongoing improvements in ambient air quality, the Project would not be capable of resulting in a CO “hot spot” at any study area intersections. Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The busiest Los Angeles intersection evaluated by the SCAQMD was at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day and a.m. and p.m. traffic volumes of 8,062 vph and 7,719 vph, respectively. The 2003 AQMP CO “hot-spot” analysis estimated that the 1-hour concentration for this intersection was 4.6 parts per million (ppm), which indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations would be 18.4 ppm and would still not likely exceed the most stringent 1-hour CO standard of 20.0 ppm. At build out of the proposed Project, the highest average daily trips would be 88,000 daily trips on Bake Parkway between Rockfield Boulevard and the Interstate 5 (I-5) northbound ramp, which is lower than the highest daily traffic volumes of 100,000 vehicles per day at Wilshire Boulevard and Veteran Avenue. Additionally, the 2003 AQMP CO “hot-spot” analysis determined that the highest traffic volumes was 8,674 vph on La Cienega Boulevard and Century Boulevard. The highest trips on a segment of road for the “Without the Portola Extension” and “With the Portola Extension” scenarios are 8,350 vph and 8,310 vph, respectively, on Bake Parkway and Rockfield Boulevard. As such, Project-related traffic volumes are less than the traffic volumes identified in the 2003 AQMP CO “hot-spot” analysis. Because the proposed Project would not produce the volume of traffic required to generate a CO “hot spot”, CO emissions from operation of the proposed Project would not expose sensitive receptors to substantial pollutant concentrations. Impacts related to CO hot spots would be less than significant, and no mitigation is required.

Health Risk Assessment. Although potential effects of the environment on the Project are typically not a subject of CEQA analysis, due to the proximity of SR-241 to the proposed school (300 ft northwest of the school site boundary), a Health Risk Assessment was conducted for informational purposes. The purpose of the Health Risk Assessment was to disclose the potential cancer risks to students and staff at the proposed school from diesel-fueled vehicles that use the freeway and emit carcinogenic compounds. Emissions of criteria pollutants and toxic air contaminants (TACs) from vehicles traveling on SR-241 were estimated and compared to the SCAQMD and OEHHA threshold of 10 in 1 million to determine if air quality at the proposed school would pose a short-term or long-term

exposure risk to students and staff. It should be noted that the EPA and OEHHA recommend that conservative assumptions be used in a Health Risk Assessment to ensure that the estimated risk does not underestimate the actual risk. Therefore, the estimated risks do not necessarily represent actual risks experienced by a population at or near a site.

An evaluation was also conducted using the HI approach for the potential non-cancer effects of chronic and acute exposures to non-carcinogenic impacts. The HI assumes that chronic and acute sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). A health hazard would be presumed to exist if the HI for the Project equals or exceeds 1.

The results of the Health Risk Assessment are provided in Table 4.3.J. Table 4.3.J shows the cancer risk and HI for students and staff at the proposed school compared to SCAQMD and OEHHA thresholds. Based on a comparison to the carcinogenic and non-carcinogenic thresholds established by OEHHA and SCAQMD, hazardous air emissions generated from the stationary and mobile sources within a 0.25 mi radius are not anticipated to pose an actual or potential health risk to students and staff at the proposed school because the cancer risk and HI for the proposed Project would not exceed the SCAQMD and OEHHA thresholds.

Table 4.3.J: Health Risk Assessment Results

Source	Cancer Risk (per million)		Chronic Hazard Index	Acute (1-Hour) Hazard Index	8-Hour Hazard Index
	Staff Exposure	Student Exposure			
Diesel-fueled Vehicles	0.05	0.08	0.001	0.002	0.001
SCAQMD and OEHHA Thresholds	10	10	1.0	1.0	1.0
Exceeds Threshold	NO	NO	NO	NO	NO

Source: *Health Risk Assessment (Placeworks 2019a)* and *Air Quality Impact Analysis (Urban Crossroads 2019a)*

OEHHA = Office of Environmental Health Hazard Assessment

SCAQMD = South Coast Air Quality Management District

4.3.7 Cumulative Impacts

Air pollution is inherently a cumulative impact measured across an air basin. The discussion under Threshold 4.3.2, above, includes an analysis of the proposed Project’s contribution to cumulative air impacts. To summarize the conclusion with respect to that analysis, the incremental effect of projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively considerable per SCAQMD guidelines. The proposed Project’s construction- and operation-related regional daily emissions are less than the SCAQMD significance thresholds for all criteria pollutants. In addition, adherence to SCAQMD rules and regulations on a project-by-project basis would substantially reduce potential impacts associated with the related projects and basin-wide air pollutant emissions. Therefore, the proposed Project would not have a cumulatively considerable increase in emissions, and the proposed Project’s cumulative air quality impacts would be less than significant.

4.3.8 Level of Significance Prior to Mitigation

Construction and operation of the proposed Project would result in less than significant air quality impacts with implementation of Regulatory Compliance Measures.

4.3.9 Regulatory Compliance Measures and Mitigation Measures

The proposed Project would not result in significant impacts related to air quality, and no mitigation is required.

The following Regulatory Compliance Measures are SCAQMD Rules that are applicable to the proposed Project and are considered in the analysis of potential impacts related to air quality. The City of Lake Forest considers these requirements to be mandatory; therefore, they are not mitigation measures.

RCM AQ-1 South Coast Air Quality Management District (SCAQMD) Rule 403. The Project Applicant shall ensure the Construction Contractor implements fugitive dust control measures in compliance with SCAQMD Rule 403. The Project Applicant shall include the following fugitive dust control measures for SCAQMD Rule 403 compliance in the Project plans and specifications:

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 miles per hour (mph) per SCAQMD guidelines in order to limit fugitive dust emissions.
- The Construction Contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered, with complete coverage of disturbed areas, at least three (3) times daily during dry weather and preferably mid-morning, afternoon, and after work is done for the day.
- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 mph or less.

RCM AQ-2 SCAQMD Rule 1113. The Project Applicant shall ensure the Construction Contractor implements measures to control volatile organic compound (VOC) emissions from architectural coatings in compliance with SCAQMD Rule 1113. The Project Applicant shall include the following control measures for SCAQMD Rule 1113 compliance in the Project plans and specifications:

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

RCM AQ-3: SCAQMD Rule 445. Prior to the issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design does not include wood-burning stoves and fireplaces in new development in compliance with SCAQMD Rule 445.

RCM AQ-4: Title 24 of the California Code of Regulations (CCR). Prior to issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and the California Green Building Standards Code (CALGreen).

4.3.10 Level of Significance after Mitigation

Construction and operational air quality impacts would be less than significant.

4.4 BIOLOGICAL RESOURCES

This section provides a discussion of the existing biological resources within the boundaries of the proposed Project site and provides an analysis of potential impacts to biological resources from implementation of the proposed Project. Where impacts are identified, mitigation measures pursuant to the California Environmental Quality Act (CEQA), the State and Federal Endangered Species Act (CESA and FESA, respectively), and other pertinent regulations are recommended. This Biological Resources section is based on the information and findings of the *Biological Technical Report* (GLA 2019) and the *Biological Regulatory Overview for the Approximately 121-Acre Lake Forest Nursery Site* (GLA 2017), which are included in Appendix D.

It should be noted that the *Biological Technical Report* (GLA 2019) provides the results of general biological surveys and focused biological surveys for the 121.8-acre (ac) Project site and an additional 2.75 ac of adjacent road and slope improvements, totaling 124.55 ac.

4.4.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Four comment letters included comments related to biological resources.

The letter from the California Department of Fish and Wildlife (CDFW) (August 14, 2018) expressed concern about potential impacts to coastal sage scrub and associated species, specifically coastal California gnatcatcher. The CDFW also outlined the procedure for payment of in-lieu fees to mitigate impacts to occupied coastal sage scrub and clarified that impacts to unoccupied coastal sage scrub also constitute impacts. The CDFW suggested mitigation measures to compensate for potential impacts to riparian corridors and wetlands and noted that completion of a jurisdictional delineation is required. They also noted that the Applicant is required to enter into a Lake and Streambed Alteration Agreement (LSAA) and requested that impacts to stream or riparian resources be identified in the Environmental Impact Report (EIR). CDFW also suggested that an assessment of floral and faunal species be conducted on the Project site and adjacent areas, and states that the EIR should also evaluate potential impacts related to lighting, noise, human activity, exotic species, and drainage on biological resources.

The EIR should also satisfy the CESA Incidental Take Permit requirements. The CDFW suggested mitigation for avoidance or protection of Rare Natural Communities; for any adverse Project-related impacts to sensitive plants, animals, or habitats; for proposed preservation and/or restoration areas; and for avoidance of nesting and migratory birds. Additionally, CDFW expressed concern with the expertise of the persons preparing the plans for restoration and revegetation, and the inclusion of certain elements in those plans. Finally, CDFW expressed concern with relocation, salvage, or transplantation of rare, threatened, or endangered species and with invasive shot hole borer (ISHB) beetles and their impact on trees, for which they suggested potential mitigation measures.

The letter from the Santa Ana Regional Water Quality Control Board (RWQCB) (August 15, 2018) suggested that a jurisdictional wetland delineation be performed. The RWQCB also commented that if the proposed Project would result in impacts to jurisdictional waters, then a Clean Water Act

(CWA) Section 401 permit from the RWQCB, a CWA Section 404 permit from the United States Army Corps of Engineers (ACOE), and a Streambed Alteration Agreement (SAA) from the CDFW would be required.

The letter from Southern California Edison (August 14, 2018) suggests analysis of the biological impacts associated with Project-related utility work. The letter from Judy Esposito (August 6, 2018) expressed concern about animals coming closer to residential areas to scavenge garbage.

4.4.2 Existing Environmental Setting

Agricultural land uses consisting of an active nursery operation occupy the vast majority of the Project site. Nursery activities have remained active since 1979, causing a general lack of native vegetation communities on the Project site, with the exception of a small patch of remnant coastal sage scrub occurring within the southeastern corner of the site and riparian forest located immediately adjacent to Serrano Creek along the southeastern boundary of the Project site. ~~A water quality treatment ditch~~ An on-site earthen and partly paved drainage system (herein referred to as the existing on-site drainage system) designed to infiltrate flows from nursery operations prior to leaving the Project site bisects the site and is routinely maintained free of vegetation. Developed areas consisting of equipment maintenance buildings and nursery offices were also observed at the Project site.

4.4.2.1 Vegetation

During vegetation mapping of the Project site, four different habitat (vegetation) types were identified. Table 4.4.A provides a summary of vegetation types/land uses and the corresponding acreage. Detailed descriptions of each vegetation type follow the table. Figure 4.4.1 is a vegetation map showing the location of each habitat type on the Project site.










Table 4.4.A: Summary of Vegetation/Land Use Types for the Project Site

Orange County Habitat Types	Acreage
Maritime Succulent Scrub/Southern Cactus Scrub	0.28
Southern Black Willow Forest	2.17
Active Agriculture	118.66
Bare Ground/Developed	3.44
Habitat Total	124.55

Source: *Biological Technical Report* (GLA 2019).
GLA = Glenn Lukos Associates, Inc.

Maritime Succulent Scrub/Southern Cactus Scrub (Coastal Sage Scrub). The 0.28 ac of maritime succulent scrub occurs along the southwestern boundary of the Project site. It appears to be a remnant patch from when lands in the vicinity were covered with natural vegetation including this form of sage scrub. This patch is vegetated with coast prickly pear (*Opuntia littoralis*), lemonade berry (*Rhus integrifolia*), California sagebrush (*Artemisia californica*), and telegraph weed (*Heterotheca grandiflora*).



-  Project Boundary Boundary
-  Conservation Area
-  Permanent Impact Limits
-  Temporary Impact Limits
-  Avoidance Area
-  Agriculture
-  Bare Ground/Developed
-  Maritime Succulent Scrub
-  Southern Black Willow Forest

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SOURCE: Glenn Lukos Associates

I:\CLF1801\G\Vegetation_Map.cdr (7/5/2019)

FIGURE 4.4.1

*Nakase Nursery/Toll Brothers
Vegetation Map*

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This native scrub is highly degraded at this location due to invasive weedy garden escapees from the nursery operation and is not expected to support wildlife associated with larger stands of sage scrub. A focused survey for coastal California gnatcatcher (*Polioptila californica californica*), an obligate sage scrub species that is federally listed as Threatened, was performed only due to the proximity of this patch to Serrano Creek, which could result in a California gnatcatcher visiting this area while moving up or downstream to reach existing open space well north and south of the Project site. Maritime succulent scrub is considered a special-status vegetation community.

The maritime succulent scrub/southern cactus scrub (coastal sage scrub) located on the Project site is not within federally designated Critical Habitat because it is a small (0.28 ac) remnant patch of this community and highly disturbed in nature. There is no federally designated Critical Habitat mapped within or adjacent to the Project site. The nearest Critical Habitat (for a California gnatcatcher) is located approximately 1 mile (mi) west and approximately 1.5 mi east of the Project site.

Southern Black Willow Forest. Approximately 2.17 ac of riparian forest, best characterized as southern black willow forest, was mapped during the survey of the Project site. As shown on Figure 4.4.1, the southern black willow forest is located on the Project site adjacent to Serrano Creek. This vegetation type consists of a mix of native riparian and nonnative plant species and includes eucalyptus (*Eucalyptus* sp.), coast live oak (*Quercus agrifolia*), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), mule fat (*Baccharis salicifolia*), toyon (*Heteromeles arbutifolia*), Spanish dagger (*Yucca gloriosa*), and mission prickly-pear (*Opuntia ficus-indica*). Southern black willow forest is considered a special-status vegetation community.

Active Agriculture. The Project site is primarily characterized as active agriculture (nursery stock), totaling 118.66 ac. The agricultural land use, consisting of the active nursery operation, contains a variety of nonnative ornamental plant species that are grown in containers for commercial resale.

Bare Ground/Developed. Approximately 3.44 ac of bare ground/developed land occurs between Rancho Parkway and the existing nursery and between Bake Parkway and the existing nursery. This land is outside the nursery property but is proposed for improvements. This area is bare ground, portions of which have been planted with ornamental trees, including Peruvian pepper tree (*Schinus molle*) and coast live oak.

4.4.2.2 Special-Status Plants

Eight species of special-status plants were initially judged to have potential to occur on the Project site, based on a preliminary review of habitat needs and site conditions. A focused plant survey was performed, and special-status plant species were confirmed absent from the Project site.

4.4.2.3 Wildlife

Animal species observed consisted of common avian species, and included common raven (*Corvus corax*), western kingbird (*Tyrannus verticalis*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaid macroura*), California towhee (*Melospiza crissalis*), house finch (*Haemorhous mexicanus*), Bewick's wren (*Thryomanes bewickii*), and Say's phoebe (*Sayornis saya*).

4.4.2.4 Special-Status Animals

The Project site contains trees, shrubs, and ground cover that provide suitable habitat for nesting migratory birds. Two special-status species of wildlife were detected during the 2017 field studies: willow flycatcher (*Empidonax traillii*) and yellow warbler (*Setophaga petechia*). The Project site also provides suitable foraging habitat for several raptor species, including, but not limited to Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), and the white-tailed kite (*Elanus leucurus*). Cooper's hawk and red-tailed hawk nest in Serrano Creek with no other species nesting on the Project site during the field studies.

In addition, two special-status bats have potential to occur in Serrano Creek: western mastiff bat (*Eumops perotis californicus*) and western red bat (*Lasiurus blossevillii*). Neither species is State or federally listed but both are State Species of Special Concern. These bats, along with several non-special-status bats, have potential to roost and possibly breed in proximity to Serrano Creek.

Willow Flycatcher. During the focused surveys for southwestern willow flycatcher (*Empidonax traillii extimus*), a willow flycatcher was detected. The subspecies of willow flycatcher detected was confirmed to not be the southwestern willow flycatcher subspecies based on when the individual was observed. The subspecies detected was likely the subspecies *E. t. brewsteri*, which does not breed in southern California but migrates through the area in spring and fall. While only southwestern willow flycatcher is federally listed, all subspecies of willow flycatcher are State listed. The State does not protect habitat used by willow flycatchers migrating through and all non-extimus willow flycatchers are habitat generalists during migration.

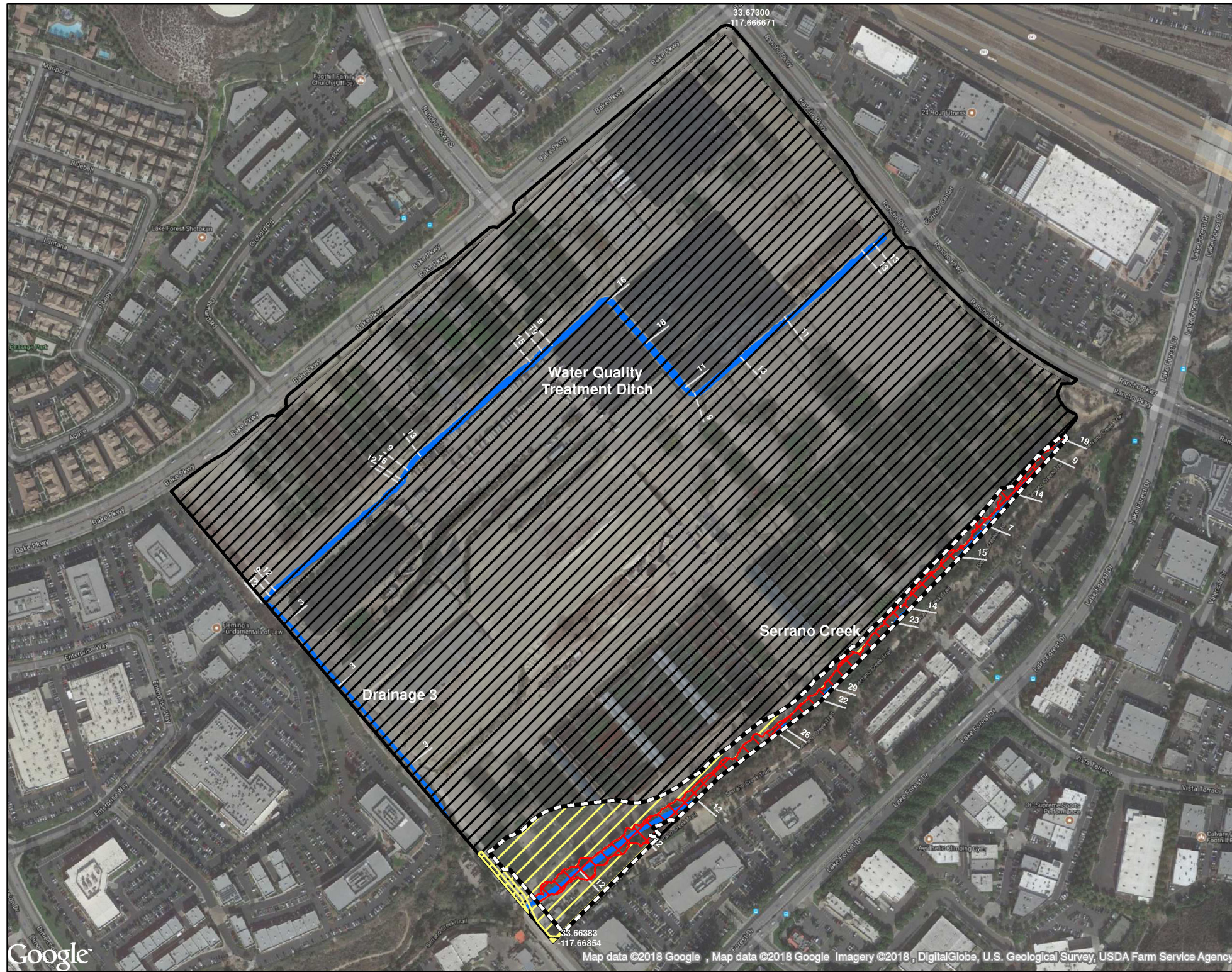
Yellow Warbler. This species of warbler is an obligate of riparian vegetation for nesting and was detected in Serrano Creek during the field studies. Yellow warbler is a state Species of Special Concern and may breed in proximity to Serrano Creek.

4.4.2.5 Delineation of Jurisdictional Waters

The Project site is within the San Diego Creek Watershed Special Area Management Plan (SAMP), and contains three drainage features: (1) the ~~Water Quality Treatment Ditch existing on-site drainage system~~, (2) Serrano Creek, and (3) unvegetated ephemeral Drainage 3. These drainages are ultimately tributary to San Diego Creek, which is tributary to Upper Newport Bay, which is tributary to the Pacific Ocean.

Potential ACOE jurisdiction associated with the Project site totals 1.28 ac, none of which consists of jurisdictional wetlands, and a total of 4,971 linear feet of streambed is present. The boundaries of potential ACOE jurisdiction are depicted on Figure 4.4.2.

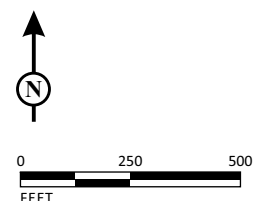
Potential RWQCB jurisdiction associated with the Project site totals 1.28 ac, none of which consists of jurisdictional wetlands (refer to Figure 4.4.2, ACOE/RWQCB Jurisdictional Areas). A total of 4,971 linear feet of streambed is present. As noted above, the ~~Water Quality Treatment Ditch existing on-site drainage system~~, Serrano Creek, and Drainage 3 have been determined to be potential ACOE



- Project Boundary
- Permanent Impact Limits
- Temporary Impact Limits
- Conservation Area
- Avoidance Area
- Corps/RWQCB Non-Wetland Waters
- Width in Feet

FIGURE 4.4.2

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SOURCE: Glenn Lukos Associates

Nakase Nursery/Toll Brothers
ACOE/RWQCB Jurisdictional Areas

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jurisdictional waters, subject to regulation pursuant to Section 404 of the CWA and subject to regulation by the RWQCB pursuant to Section 401 of the CWA. Potential CDFW jurisdiction associated with the Project site totals 4.11 ac, of which 1.94 ac consist of non-riparian streambed and 2.17 ac consists of vegetated riparian habitat. The boundaries of potential CDFW jurisdiction within the Project site are depicted on the enclosed jurisdictional delineation map provided as Figure 4.4.3.

Table 4.4.B provides a summary of the total area of potential ACOE, RWQCB, and CDFW jurisdiction within the Project site.

The ~~Water Quality Treatment Ditch existing on-site drainage system~~ is an intermittent drainage feature that generally bisects the Project site from northeast to southwest. This ~~Water Quality Treatment Ditch existing on-site drainage system~~ is regularly maintained in order to remain free of vegetation and sediment for maximum capacity, on-site retention, and treatment of flows.

Serrano Creek is an intermittent drainage that extends along the southeastern boundary of the Project site. Serrano Creek supports a riparian forest consisting of both native and nonnative species, including eucalyptus, coast live oak, western sycamore, Fremont cottonwood, Goodding's black willow (*Salix gooddingii*), mule fat, toyon, Spanish dagger, and mission prickly-pear.

Drainage 3 is an unvegetated ephemeral drainage feature that is located along the southwestern boundary of the Project site. Drainage 3 drains into the ~~Water Quality Treatment Ditch existing on-site drainage system~~ that drains into an off-site portion of Serrano Creek.

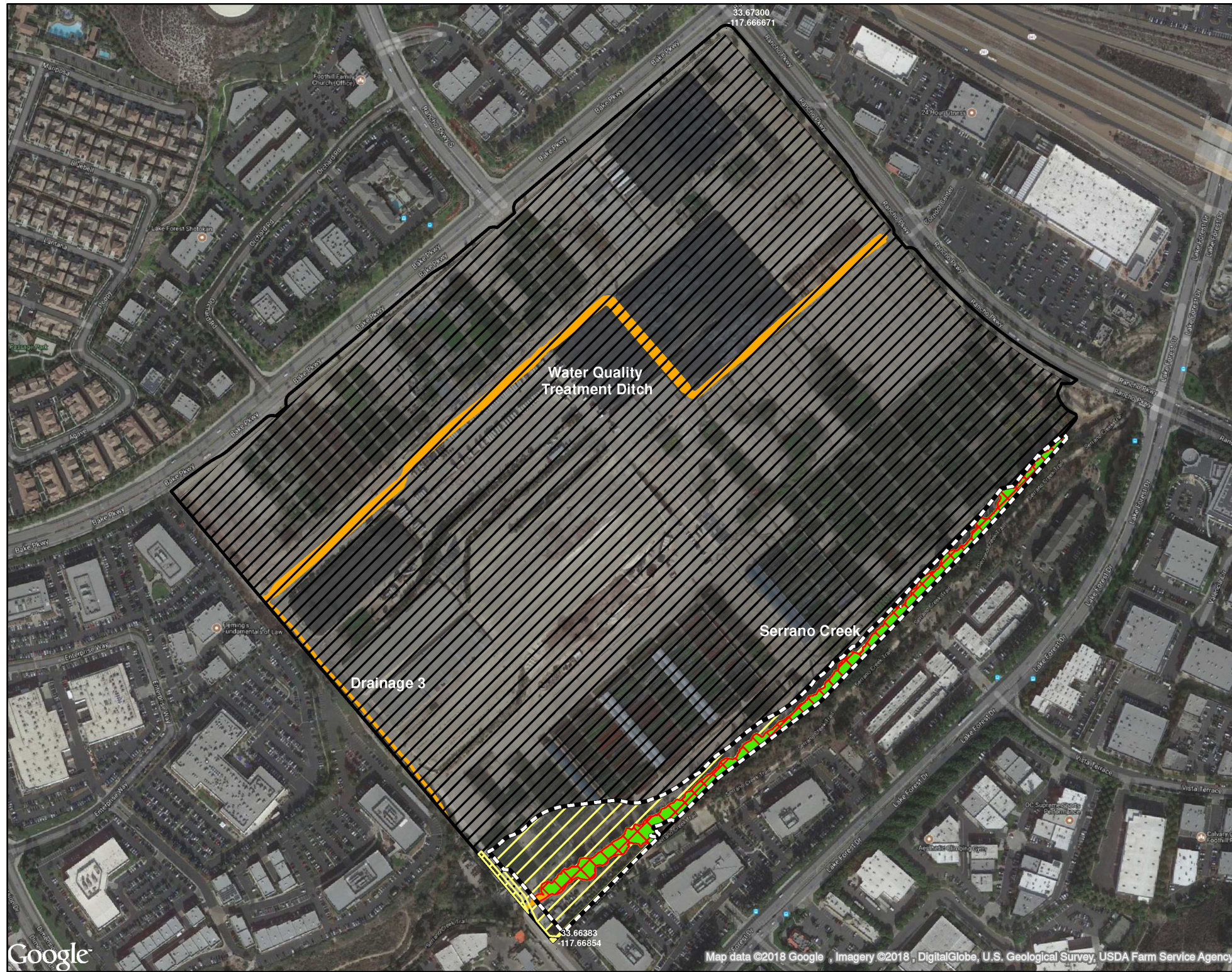
4.4.3 Regulatory Setting

4.4.3.1 Federal Regulations

Federal Endangered Species Act of 1973. The FESA defines an endangered species as “any species that is in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as “any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Under provisions of Section 9(a)(1)(B) of the FESA, it is unlawful to “take” any listed species.

“Take” is defined in Section 3(18) of FESA: “...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Further, the USFWS, through regulation, has interpreted the terms “harm” and “harass” to include certain types of habitat modification that result in injury to, or death of species, as forms of “take.” These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with the USFWS to ensure the action is not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of designated critical habitat. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

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-  Property Boundary
-  Permanent Impact Limits
-  Temporary Impact Limits
-  Conservation Area
-  Avoidance Area
-  CDFW Riparian
-  CDFW Unvegetated

FIGURE 4.4.3

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SOURCE: Glenn Lukos Associates

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Nakase Nursery/Toll Brothers
CDFW Jurisdictional Areas

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Table 4.4.B: Summary of ACOE, CDFW, and RWQCB Jurisdiction on the Project Site

Drainage Feature	Resource Type	ACOE			CDFW			Total RWQCB Acreage	Total Length (linear feet)
		Wetland (acres)	Nonwetland Waters (acres)	Total (acres)	Vegetated Streambed (acres)	Unvegetated Streambed (acres)	Total (acres)		
Water Quality Treatment Ditch Existing On-Site Drainage System	Intermittent	0.0	0.92	0.92	0.0	1.84	1.84	0.92	3,032
Serrano Creek	Intermittent	0.0	0.29	0.29	2.17	0.03	2.20	0.29	928
Drainage 3	Ephemeral	0.0	0.07	0.07	0.0	0.07	0.07	0.07	1,011
Totals		0.0	1.28	1.28	2.17	1.94	4.11	1.28	4,971

Source: *Biological Technical Report* (GLA 2019).
 ACOE = United States Army Corps of Engineers
 CDFS = California Department of Fish and Wildlife
 GLA = Glenn Lukos Associates, Inc.
 RWQCB = Regional Water Quality Control Board

The take of federally listed species can be authorized under Section 10(a) of the FESA, with development of a Habitat Conservation Plan (HCP) or as part of a Section 7 consultation between the USFWS and another federal agency if the Project is subject to federal action (e.g., a Section 404 Permit). Upon development of an HCP, the USFWS can issue incidental take permits for listed species where the HCP specifies at 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 that were considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan. In certain instances, such as for the California gnatcatcher, take of a Threatened species can be authorized by special rule (i.e., 4[d]). In the case of the California gnatcatcher, the 4(d) rule applies in jurisdictions that are participating in the State's Natural Communities Conservation Plan (NCCP) program dealing with coastal sage scrub plant communities.

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

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

Section 404 of the Clean Water Act. The ACOE regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria. The ACOE regulatory jurisdiction pursuant to Section 404 of the federal CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the ACOE regulations. The following definition of waters of the United States is taken from the discussion provided in 33 Code of Federal Regulations (CFR) 328.3:

The term waters of the United States means:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce . . . ;
- (2) All interstate waters including interstate wetlands;

- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) . . . the use, degradation or destruction of which could affect interstate or foreign commerce . . . ;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition; and
- (5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section.”

The ACOE typically regulates as waters of the United States any body of water displaying an ordinary high water mark (OHWM). The landward limits of ACOE jurisdiction in tidal waters of the United States extend to the high tide line, and ACOE jurisdiction over nontidal waters of the United States extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area” (33 CFR 328.3). Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

The ACOE and the United States Environmental Protection Agency (EPA) define wetlands as follows:

Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met. Several parameters may be analyzed to determine whether the criteria are satisfied.

4.4.3.2 State Regulations

California Endangered Species Act. The CDFW, via policies formulated by the California Fish and Game Commission (Commission), regulates species of plants and animals that are in danger of, or threatened with, extinction. The Commission has established a list of Endangered, Threatened, and candidate species that are regulated by the CDFW. Endangered species are native species or subspecies of plants and animals that are in serious danger of becoming extinct throughout all or a significant portion of their range. Threatened species are those species that, although not presently threatened with extinction, are likely to become Endangered species in the foreseeable future in the absence of special protection and management efforts. Candidate species are those species the Commission has formally noticed as being under review for addition to either the list of Endangered or Threatened species or a species proposed for listing.

California Environmental Quality Act. CEQA requires evaluation of a project's impacts on biological resources and provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts. Furthermore, pursuant to *State CEQA Guidelines* Section 15380, CEQA provides protection for non-listed species that could potentially meet the criteria for State listing. For plants, CDFW recognizes that plants on Lists 1A, 1B, or 2 of the CNPS Inventory of Rare and Endangered Plants in California may meet the criteria for listing and should be considered under CEQA. CDFW also recommends protection of plants, which are regionally important, such as locally rare species, disjunct populations of more common plants, or plants on CNPS List 3 or 4.

California Natural Diversity Database. The CDFW administers the California Natural Diversity Database (CNDDDB), which maintains lists of special-interest plants, animals, and natural communities that occur within California. These particular natural communities, or habitat types, are designated as sensitive because of their rarity (e.g., very localized distribution, few scattered occurrences) and/or because of some threat (e.g., development, off-road vehicles) to this specific habitat type. The purpose of these listings is solely informational; there is no regulatory protection of these communities afforded by the CNDDDB listings.

Sections 1600-1603 of the California Fish and Game Code. Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or manmade reservoirs." CDFW also defines a stream as "a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators."

It is important to note that the California Fish and Game Code defines fish and wildlife to include all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities, including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45, and Division 2, Chapter 1, section 711.2(a), respectively).

Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

Fish and Game Code Section 3503. Sections 3503, 3503.5, and 3513 protect native birds. Mitigation for avoidance of impacts to nesting birds are typically necessary to comply with these sections of the California Fish and Game Code in CEQA and other permitting documents. Specifically, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests, or eggs.

California Native Plant Society. The CNPS is a nonprofit organization whose purpose is to promote the preservation of native California plants. The CNPS has compiled an inventory comprised of the information focusing on 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 the CDFW.

Section 401 of the Clean Water Act. Section 401 of the CWA requires any applicant for a Section 404 permit to obtain certification from the State that the discharge (and the operation of the facility being constructed) will comply with the applicable effluent limitation and water quality standards. In California, this 401 certification is obtained from the RWQCB. The ACOE, by law, cannot issue a Section 404 permit until a 401 certification is issued or waived. Areas subject to RWQCB jurisdiction typically coincide with those of the ACOE (i.e., waters of the United States, including any wetlands). The RWQCB also asserts authority over waters of the State under waste discharge requirements pursuant to the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act), but this mechanism is typically not invoked in cases where the ACOE asserts permitting authority pursuant to the CWA.

4.4.3.3 Regional Regulations

Central/Coastal Subregion Natural Communities Conservation Program/Habitat Conservation Plan. The California Fish and Game Commission voted in favor of pursuing preparation of an NCCP, as proposed by pursuing preparation of an NCCP program, as proposed by Assembly Bill (AB) 2172 (California Fish and Game Code, Sections 2800 et seq.). AB 2172 authorizes the CDFW to enter agreements with any person or local, State, or federal agencies for preparing and implementing NCCPs and for preparing guidelines for developing and implementing NCCPs.

The purpose of the NCCP program is to provide regional or area wide protection and to promote perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. The focus of the NCCP program represents a dramatic shift from “individual species” to “habitat” preservation. This NCCP/HCP is intended to ensure the long-term survival of the coastal California gnatcatcher and other special-status, coastal-sage-scrub-dependent plant and wildlife species, in accordance with State-sanctioned NCCP program guidelines.

The County of Orange (in conjunction with State and federal resource agencies, local jurisdictions/municipalities, utility companies, the Transportation Corridor Agencies [TCA], and major private landowners) prepared the NCCP/HCP for the Central/Coastal Subregion (approved on July 10, 1996). The City of Lake Forest is a signatory to the NCCP/HCP. The Project site is located within the Central/Coastal Subregion of Orange County, California, but the Project Applicant is a non-participating landowner. As such, there are no specific requirements of the NCCP/HCP that applies to this Project.

Regional General Permit 74 and Special Area Management Plan. Regional General Permit 74 is one part of the permitting frameworks developed for the ACOE’s two SAMPs in Orange County, California (i.e., the San Diego Creek Watershed SAMP and the San Juan Creek/Western San Mateo Creek Watershed SAMP).

The SAMP permitting frameworks replace the pre-SAMP permitting procedures available in these watersheds prior to the ACOE formulation and adoption of the SAMPs. The SAMP permitting framework involves the establishment of abbreviated permit processing procedures in the form of Regional General Permit 74 and new CWA Section 404 letter of permission procedures in combination with the use of selected nationwide permits and standard individual permits.

Watershed-specific mitigation policies are also being implemented under both the SAMPs. The SAMP permitting frameworks consider the type of regulated activity, permanency of impacts, and location of proposed activity within the SAMP watersheds (i.e., whether the activity would affect sensitive aquatic resources also identified as aquatic resource integrity areas).

For the San Diego Creek Watershed SAMP, CDFW established a Watershed Streambed Alteration Agreement (WSAA) process that will augment Streambed Alteration Agreement (California Fish and Game Code Section 1600) processing procedures within the San Diego Creek Watershed in Orange County, California.

4.4.3.4 Local Regulations

City of Lake Forest General Plan. According to the Recreation and Resources Element of the City's General Plan, Lake Forest contains many important natural resources and features, including its eucalyptus forest and other trees, lakes, creeks, canyons, hillsides, mineral resource areas, and other open lands. These resources add to the value of property, provide visual changes in an urban environment that create interest, and offer important landmarks that communicate a sense of place and location within the community. These important resources can be preserved or enhanced to maintain the natural physical and visual quality of Lake Forest. Goals and policies applicable to the proposed Project include:

Goal 2.0: Preservation and enhancement of important natural resources and features.

Policy 2.1: Conserve and protect important natural plant and animal communities, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.

City of Lake Forest Municipal Code. From April 1st through October 31st of each year, the City of Lake Forest Municipal Code (Section 6.20.025) prohibits any person from pruning, cutting branches from, topping, or cutting down any eucalyptus tree on public property within Lake Forest or to transport on its streets or highways any logs, branches, or trunk of any eucalyptus tree, unless a eucalyptus tree cutting permit has been obtained from the City of Lake Forest (City).

4.4.4 Methodology

To adequately identify biological resources in accordance with the requirements of CEQA, Glenn Lukos Associates, Inc. (GLA) assembled biological data consisting of the following main components:

- Literature review and database searches;
- Delineation of aquatic resources (including wetlands and riparian habitat) subject to the jurisdiction of the ACOE, RWQCB, and CDFW;
- Performance of vegetation mapping for the Project site; and
- Performance of habitat assessments and site-specific biological surveys (focused surveys) to evaluate the presence/absence of special-status species in accordance with the requirements of CEQA.

The focus of the biological surveys was determined through initial site reconnaissance, a review of the CNDDDB, CNPS 8th edition online inventory, Natural Resource Conservation Service (NRCS) soil data, other pertinent literature, and knowledge of the region. Site-specific general surveys within the Project site were conducted on foot in the proposed development areas for each target plant or animal. Vegetation was mapped directly onto a 200 ft scale (1 inch = 200 ft) aerial photograph following the Habitat Classification System Natural Resources Geographic Information System (GIS) Project. All flora and fauna identified on the Project site during vegetation mapping were included in a floral and faunal compendia prepared for the Project (refer to Appendices A and B of the *Biological Technical Report* which is Appendix D of this EIR). Vegetation communities not listed under the above-mentioned vegetation classification systems were named based on the dominant plant species present. All vegetation mapping was imported into ArcGIS for acreage analysis.

GLA senior biologist Zack West and regulatory specialist April Nakagawa visited the Project site on July 27 and 28, 2016, to conduct a general site review. Additional follow-up visits were made by Zack West and senior regulatory specialist Thienan Pfeiffer on October 6 and November 17, 2016, and at various times during March and April 2017. Site reconnaissance was conducted in such a manner as to allow inspection of the entire site by direct observation, including the use of binoculars. The Project site was inspected to determine whether any special-status species, habitats, or potential jurisdictional areas are present on site.

In addition to site reconnaissance, evaluation of the Project site included a review of the CNDDDB for the El Toro quadrangle and surrounding quadrangles, a review of the CNPS on-line Inventory, a soil map review, and review of various documents provided by Toll Brothers, Inc.

4.4.4.1 Summary of Surveys

GLA conducted biological studies to identify and analyze actual or potential impacts to biological resources associated with development of the Project site. Observations of all plant and wildlife species were recorded during each of the above-mentioned survey efforts. The studies conducted include the following:

- Performance of vegetation mapping
- Performance of site-specific habitat assessments and 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
- Focused surveys for:
 - Rare plants
 - Burrowing owl
 - Coastal California gnatcatcher
 - Least Bell's vireo
 - Southwestern willow flycatcher
- Delineation of aquatic resources (including wetlands and riparian habitat) potentially subject to the jurisdiction of the ACOE, RWQCB, and CDFW

Individual plants and wildlife species are evaluated in this report based on their "special status." For the purpose of this report, plants were considered "special status" based on one or more of the following criteria:

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

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

- Listing through FESA and/or CESA, and
- 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 their occurrence in the CNDDDB inventory.

4.4.4.2 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Project site, and consisted of five components: (1) a literature search; (2) preparation of a list of target special-status plant species and sensitive vegetation communities that could occur within the Project site; (3) general field reconnaissance surveys; (4) vegetation mapping; and (5) habitat assessments and focused surveys for special-status plants.

- **Literature Search:** Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- CNPS Inventory of Rare and Endangered Plants for the United States Geological Survey (USGS) 7.5-minute quadrangles: *Black Star Canyon, Canada Gobernadora, Corona South, El Toro, Laguna Beach, Orange, San Juan Capistrano, Santiago Peak, and Tustin, California* (online edition, v8-02) (CNPS 2017); and
- CNDDDB for the USGS 7.5-minute quadrangles: *Black Star Canyon, Canada Gobernadora, Corona South, El Toro, Laguna Beach, Orange, San Juan Capistrano, Santiago Peak, and Tustin, California*.
- **Vegetation Mapping:** Vegetation communities within the Project site were mapped according to the Habitat Classification System Natural Resources GIS Project.
- **Special-Status Plant Species and Habitats Evaluated for the Project Site:** As described above, a literature search was conducted to obtain a list of special-status plants with the potential to occur within the Project site. The CNDDDB was initially consulted to determine well-known occurrences of plants and habitats of special concern in the region. Other sources used to develop a list of target species for the survey program included the CNPS online inventory.

Based on this information, vegetation profiles and a list of target sensitive-plant species and habitats that could occur within the Project site were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use; (2) prepare a detailed floristic compendium; (3) identify the potential for any special-status plants that may occur within the Project site; and (4) prepare a map showing the distribution of any sensitive botanical resources associated with the Project site, if applicable.

- **Botanical Surveys:** GLA biologist Zack West visited the site on April 19 and May 22, 2017, to conduct general and focused plant surveys. Surveys were conducted in accordance with accepted botanical survey guidelines. As applicable, surveys were conducted at appropriate times based on precipitation and flowering periods. An aerial photograph, a soil map, and/or a topographic map were used to determine the community types and other physical features that may support sensitive and uncommon taxa or communities within the Project site. Surveys were conducted by following meandering transects within target areas of suitable habitat. All plant species encountered during the field surveys were identified and recorded following the guidelines adopted by CNPS and CDFW.

4.4.4.3 Wildlife Resources

Wildlife species were evaluated and detected during field surveys by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the entire Project site by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during the visit.

Literature Search. A literature search was conducted to obtain a list of special-status wildlife species with the potential to occur within the Project site. Species were evaluated based on two factors: (1) species identified by the CNDDDB as occurring (either currently or historically) on or in the vicinity

of the Project site; and (2) any other special-status animals that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs on the Project site.

Focused Surveys for Special-Status Animal Species. GLA biologists Zack West and April Nakagawa conducted habitat assessments for special-status animal species on July 27 and 28, 2016. An aerial photograph, soil map, and/or topographic map were used to determine the community types and other physical features that may support special-status and uncommon taxa within the Project site.

- **Burrowing Owl:** GLA biologists Jeff Ahrens and Kevin Livergood conducted focused surveys for the burrowing owl (*Athene cunicularia*) for all suitable habitat areas within the Project site. Surveys were conducted in accordance with survey guidelines described in the 2012 CDFW Staff Report on Burrowing Owl Mitigation. The guidelines stipulate that four focused survey visits should be conducted between February 15th and July 15th, with the first visit occurring between February 15th and April 15th. The remaining three visits should be conducted 3 weeks apart from each other, with at least one visit occurring between June 15th and July 15th. Focused surveys were conducted on March 17, April 26, May 30, and July 3, 2017. As recommended by the survey guidelines, the survey visits were conducted between morning civil twilight and 10:00 a.m. Weather conditions during the surveys were conducive to a high level of bird activity.

Surveys were conducted by walking meandering transects throughout areas of suitable habitat, primarily rubble piles, culverts, and irrigation pipes located throughout the Project site. All suitable burrows were inspected for diagnostic owl sign (e.g., pellets, prey remains, whitewash, feathers, bones, and/or decoration) to identify potentially occupied burrows.

- **Coastal California Gnatcatcher:** GLA biologists Jeff Ahrens (Permit TE 052159-5) and Kevin Livergood (Permit TE-172638-2) conducted focused surveys for the coastal California gnatcatcher for all suitable habitat areas within the Project site. Surveys were conducted in accordance with the 1997 USFWS survey guidelines, which during the breeding season (March 15th through June 30th) require a minimum of six surveys (per survey polygon) with at least 1 week separating each survey visit. The survey guidelines limit individual biologists to surveying a maximum of 80 ac per day. The Project site contains approximately 0.28 ac of suitable habitat for the gnatcatcher. Therefore, the 0.28 ac survey area of suitable habitat was completed as a single survey polygon. Regardless, biologists recorded birds throughout the entire Project area during surveys.

Focused surveys were conducted on March 17, March 24, March 31, April 7, April 14, and April 26, 2017. Pursuant to the survey guidelines, the surveys were conducted between sunrise and 12:00 p.m. Weather conditions during the surveys were conducive to a high level of bird activity.

- **Least Bell's Vireo:** GLA biologist Kevin Livergood conducted focused surveys for the least Bell's vireo (*Vireo bellii pusillus*) for all suitable habitat areas within the Project site. Surveys were conducted in accordance with the 2001 USFWS survey guidelines, which stipulate that eight

surveys should be conducted between April 10th and July 31st, with a minimum of 10 days separating each survey visit.

Focused surveys were conducted on April 14, April 26, May 8, May 18, May 30, June 12, June 23, and July 3, 2017. Pursuant to the survey guidelines, the surveys were conducted between sunrise and 11:00 a.m. Weather conditions during the surveys were conducive to a high level of bird activity.

- **Southwestern Willow Flycatcher.** GLA biologist Jeff Ahrens conducted focused surveys for the southwestern willow flycatcher for all suitable habitat areas within the Project site. Surveys were conducted in accordance with the 2010 USFWS survey guidelines, which stipulate that five surveys should be conducted between May 15th and July 17th, and divided into three survey periods. The southwestern willow flycatcher is one of four subspecies of willow flycatcher that occur within southern California, but is the only subspecies that breeds in southern California. The other subspecies may occur in southern California during the first and second survey periods as they migrate through the area on their way breeding areas, but will not breed in southern California. Therefore, the presence of the southwestern willow flycatcher is determined by willow flycatchers that remain in southern California during the third survey period.

Focused surveys were conducted on May 20, June 1, June 15, June 25, and July 5, 2017. Pursuant to the survey guidelines, the surveys were conducted between sunrise and 10:00 a.m. Weather conditions during the surveys were conducive to a high level of bird activity.

4.4.4.4 Jurisdictional Delineation

A jurisdictional delineation was conducted for the Project site on April 7, 2017, by GLA biologist Zack West. Prior to beginning the field delineation, a 200 ft scale color aerial photograph and the previously cited USGS topographic maps were examined to determine the locations of potential areas of ACOE/CDFW jurisdiction and the San Diego Creek Watershed SAMP was reviewed for any Aquatic Resource Integrity Areas mapped within the boundaries of the Project site. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils, and hydrology. Glenn Lukos Associates, Inc. evaluated potential wetland habitats at the subject site using the methodology set forth in the ACOE 1987 Wetland Delineation Manual (Wetland Manual) and the 2008 Regional Supplement to the ACOE Wetland Delineation Manual: Arid West Supplement (Arid West Supplement). The presence of an OHWM was determined using the 2008 Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States in conjunction with the Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. While in the field, the limits of the OHWM, wetlands, and CDFW jurisdiction were recorded using global positioning system (GPS) technology and/or on copies of the aerial photography. Other data were recorded onto the appropriate datasheets.

4.4.5 Thresholds of Significance

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

- Threshold 4.4.1:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service
- Threshold 4.4.2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service
- Threshold 4.4.3:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Threshold 4.4.4:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Threshold 4.4.5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Threshold 4.4.6:** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

None of the thresholds for biological resources were scoped out in the Initial Study, which is included in Appendix A. Therefore, all of the thresholds listed above are addressed in the following analysis.

4.4.6 Project Impacts

- Threshold 4.4.1:** Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Direct Impacts

Special Interest Plant Species.

No Impact. No special-status plants are present on the Project site; therefore, no impacts to these resources would occur and no mitigation is required.

Special Interest Animal Species.

Potentially Significant Impact. The proposed Project would remove 119.77 ac (115.26 ac permanently, 4.51 ac temporarily) of potential foraging habitat for two special-status bats: the western red bat and the western mastiff bat. The agricultural lands would not provide valuable foraging habitat but could be used to some degree by these species, if present. The number of individuals potentially foraging on site is judged to be low given the degraded condition of the site. In addition, large blocks of high-quality foraging habitat are present within Whiting Ranch Wilderness Park and Limestone Canyon Regional Park, located approximately 1 mi north of the Project site. Roosting and breeding (nursery) by these species and other non-special-status bats may occur in Serrano Creek, but potential roosting habitat is not proposed for removal. The removal of 119.77 ac of low-quality potential foraging habitat for bats would be a less than significant impact.

Serrano Creek provides potential nesting habitat for yellow warbler and the species was observed during field studies. The Project proposes no removal of potential habitat for this species. No direct impact would occur. Willow flycatcher was detected as a spring migrant in Serrano Creek. As discussed above, the subspecies of willow flycatcher detected was not the southwestern subspecies, which is federally listed as Endangered. All subspecies of willow flycatcher are State listed as Endangered, but the State does not provide protection of migrant habitat, thus no potential "take" of willow flycatcher would occur under CESA. The non-southwestern subspecies of willow flycatcher that migrates through southern California in spring and fall does not breed on the Project site and during migration are habitat generalists, including the use of residential landscaping. The proposed Project would not encroach into Serrano Creek. The potential foraging that could occur by these migrants in other parts of the Project site that are proposed for impact (nursery agriculture) is not judged important habitat for these subspecies given the broad range of vegetation used by them. Potential impacts to non-southwestern willow flycatchers during migration is less than significant, and no mitigation is required.

As discussed above, protocol surveys for burrowing owls were conducted on the Project site. Surveys were conducted in accordance with survey guidelines described in the 2012 CDFW Staff Report on Burrowing Owl Mitigation. While burrowing owls were not detected on the Project site during focused surveys, the CDFW survey guidelines requires a pre-construction survey prior to ground disturbance to ensure the species has not moved onto the site between when the survey was performed and commencement of construction. Mitigation Measure 4.4.1 requires a qualified biologist to conduct a pre-construction presence/absence survey for burrowing owls within 14 days prior to site disturbance. If burrowing owls are not detected, no further action is necessary. If burrowing owls are detected during the preconstruction survey visit, the owls shall be evicted from the site (when not nesting) following accepted CDFW protocols and as approved by the CDFW to avoid direct take of burrowing owl and compensate for the loss of habitat. Compensation for the loss of occupied burrowing owl habitat shall occur at a 1:1 ratio such that the habitat acreage and

number of burrows occupied by burrowing owls impacted are replaced. As required by CDFW, a mitigation management plan shall be drafted and submitted to CDFW for approval, and will ensure lands used to compensate for the loss of habitat and burrows occupied by burrowing owls are conserved and managed in perpetuity. With implementation of Mitigation Measure 4.4.1, potential impacts to burrowing owls would be reduced below a level of significance.

Indirect Impacts

Potentially Significant Impact. In the context of biological resources, indirect effects are those effects associated with developing areas adjacent to native open space. Potential indirect effects associated with development include water quality impacts associated with drainage into adjacent open space/downstream aquatic resources; dust effects; lighting effects; noise effects; invasive plant species from landscaping; and effects from human entry into adjacent open space (e.g., recreational activities [including hiking], pets, dumping). Temporary indirect effects may also occur as a result of construction-related activities.

More specifically, indirect effects of Project construction and habitation may contribute to the degradation of the existing functions and values of Serrano Creek, and may increase depredation of wildlife from noise and lighting; dissuaded use of Serrano Creek by wildlife from noise and lighting; introduction of nonnative invasive plants that outcompete native riparian plant species and thus cause reduced value to native plants and wildlife; and increased mortality to native wildlife from dogs and cats. These impacts can occur to non-special-status as well as special-status species (e.g., western red bat, western mastiff bat, nesting hawks).

As discussed above, two special-status bats have potential to occur in Serrano Creek: western mastiff bat and western red bat. Neither species is State or federally listed but both are State Species of Special Concern. These bats, along with several non-special-status bats, have potential to roost and possibly breed in Serrano Creek. Mitigation Measure 4.4.2 requires bat roosting/nursery exit counts and acoustic surveys prior to the start of any construction activities. The mitigation also requires the preparation of a Bat Management Plan if the surveys find 25 or more individuals composed of non-special-status bat species¹ and/or one or more bats with a special-status in order to ensure that bat mortality does not occur during construction. With implementation of Mitigation Measure 4.4.2, significant impacts to bats roosting in Serrano Creek would be avoided.

In order to reduce and/or avoid the introduction of nonnative invasive plants that may outcompete native riparian plant species and thus cause reduced value to native plants and wildlife, Mitigation Measure 4.4.3 requires that none of the plants installed in common areas (including parks and open space) on the Project site as part of the proposed Project would be invasive exotic plants (i.e., those plant species rated as “High” or “Moderate” in the California Invasive Plant Council Invasive Plant Inventory).

¹ For bats, the threshold of significance would be if the population of bats potentially impacted is 25 or more individuals with no special status and one individual bat with a special status. The threshold of significance is set at 25 or more individuals for non-special-status bats because the loss of 25 individuals would not pose a significant loss to the regional population of any non-special-status species with potential to roost on the Project site.

Mitigation Measures 4.4.4 and 4.4.5 would reduce indirect impacts to Serrano Creek and wildlife (including bats) in the Serrano Creek corridor during Project construction. These mitigation measures require the installation of construction fencing around Serrano Creek and the southern black willow forest to prevent encroachment. Mitigation Measure 4.4.5 also requires construction Best Management Practices (BMPs) intended to reduce and avoid indirect impacts to wildlife related to construction lighting, noise, dust, and the spread of exotic species. Mitigation Measure 4.4.6 requires the Project Applicant/Developer to create a Wall and Fencing Plan that includes details for the use of a permanent bird strike avoidance treatment consisting of either window film (CollidEscape Clear or equivalent) or UV (ultraviolet) patterned glass (or equivalent) on all perimeter glass fencing including, but not limited to the fencing around Serrano Creek and the radiant heat wall (refer to Figure 4.19.2: Fire Protection Plan). With the implementation of Mitigation Measures 4.4.2 through 4.4.6, potential indirect impacts to sensitive plant and animal species on the Project site would be reduced below a level of significance.

Threshold 4.4.2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant Impact. Serrano Creek is vegetated with southern black willow forest, which is similar to southern mixed riparian forest and southern riparian scrub. In addition, a small patch of remnant maritime succulent scrub is present along the southwestern boundary of the property. These vegetation types can provide valuable habitat to a wide range of species associated with riparian habitats and sage scrub habitats, both of which have declined appreciably over the past several decades in Orange County and coastal southern California. As such, both the remnant maritime succulent scrub and the southern black willow forest are considered a special-status vegetation community.

The proposed Project does not include the removal of any of the southern black willow forest; therefore, there would be no direct impacts to this vegetation community. As discussed under Threshold 4.4.1, Mitigation Measures 4.4.4 and 4.4.5 would avoid indirect impacts to Serrano Creek and the southern black willow forest during Project construction. These mitigation measures require the installation of construction fencing around Serrano Creek and the southern black willow forest to prevent encroachment. Mitigation Measure 4.4.5 also requires construction BMPs intended to reduce and avoid indirect impacts to wildlife in the southern black willow forest related to construction lighting, noise, dust, and the spread of exotic species. Mitigation Measure 4.4.7 requires the Project Applicant/Developer to develop a Habitat Management Plan (HMP) for the Project site. The HMP would describe the long-term management and maintenance requirements (including funding mechanisms and monitoring) for the Open Space & Habitat & Restoration Area, including the southern black willow forest. Mitigation Measure 4.4.7 also requires that the Open Space & Habitat & Restoration Area, including the southern black willow forest, be placed in a permanent conservation easement or similar legal protection that would protect and manage the land in perpetuity. Mitigation Measure 4.1.1 in Section 4.1, Aesthetics, requires the Project Applicant/Developer to prepare a comprehensive lighting plan and a photometric survey prior to construction in order to demonstrate that no spill lighting occurs in sensitive areas. This measure is

intended to minimize the impacts of new sources of light to adjacent land uses, including Serrano Creek and the Open Space & Habitat & Restoration Area. Mitigation Measures 4.1.1, 4.4.4, 4.4.5, and 4.4.7 would ensure that the Project avoids impacts to sensitive riparian habitat (i.e., the southern black willow forest).

The Maritime Succulent Scrub/Southern Cactus Scrub (Coastal Sage Scrub) located at the Project site is a small (0.28 ac) remnant patch of this community that is highly disturbed in nature. It is not within federally designated Critical Habitat, is co-dominated by nonnative species (including ornamental species), and has a very low density. In addition, this community on the Project site represents Coastal Sage Scrub species that have been recruited, along with escaped ornamental and more invasive nonnative species, onto areas that were previously disturbed by agricultural activities, and does not represent intact Coastal Sage Scrub. Therefore, the Coastal Sage Scrub on the Project site holds marginal ecological value and, through focused surveys, was found not to support coastal California gnatcatcher or other special-status species. Based on the size and degraded quality of vegetation, potential impacts to the coastal sage scrub would be less than significant, and no mitigation is required.

The proposed Project would result in the loss of 119.77 ac (115.26 ac permanently, 4.51 ac temporarily) of foraging habitat that supports several species of raptors. As discussed under Threshold 4.4.4, Cooper's hawk and redtailed hawk both nest in the trees within Serrano Creek. There would be no proposed direct impacts to Serrano Creek, thus this nesting habitat would remain after Project implementation. Based on the degraded quality of the foraging habitat and the low number of individuals potentially affected, the loss of 119.77 ac of nursery agriculture lands would not be a significant impact, and no mitigation is required.

Threshold 4.4.3: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Potentially Significant Impact. Implementation of the proposed Project would permanently impact a 0.99 ac (4,078 linear feet of drainage) portion of the existing 1.28 ac (4,971 linear feet) of potential federal ACOE jurisdiction, none of which consists of jurisdictional wetlands. Development of the proposed Project would remove a 0.99 ac (4,078 linear feet) portion of the existing 1.28 ac (4,971 linear feet) of RWQCB jurisdiction, none of which are wetlands. For the CDFW jurisdiction on the Project site, an estimated 1.91 ac portion of the 1.94 ac of existing unvegetated streambed would be removed. The proposed Project would not impact the existing 2.17 ac of vegetated streambed. Refer to Table 4.4.C below for a summary of impacts by jurisdiction and feature.

While the Water Quality Treatment Ditch existing on-site drainage system and Drainage 3 do not support riparian vegetation (herbaceous or woody) or provide habitat to plant or wildlife species beyond what the adjacent uplands provide, the entirety of both the existing on-site drainage system and Drainage 3 would be permanently removed by the Project (Figure 4.4.2 and Figure 4.4.3).

Table 4.4.C: Summary of Proposed Impacts to ACOE, CDFW, and RWQCB Jurisdiction

Drainage Feature	Impact Type	ACOE			CDFW			Total RWQCB Acreage	Total Length (linear feet)
		Wetland (acres)	Nonwetland Waters (acres)	Total (acres)	Vegetated Streambed (acres)	Unvegetated Streambed (acres)	Total (acres)		
Existing On-site Drainage System (Intermittent)	Permanent	0.0	0.92	0.92	0.0	1.84	1.84	0.92	3,032
	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Serrano Creek (Intermittent)	Permanent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	Temporary	0.0	0.00-01	0.00-01	0.0	0.00-01	0.00-01	0.00-01	35
Drainage 3 (Ephemeral)	Permanent	0.0	0.07	0.07	0.0	0.07	0.07	0.07	1,011
	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Totals¹		0.0	0.99	0.99	0.0	1.91	1.91	0.99	4,078

Source: *Biological Technical Report* (GLA 2019).

¹ Totals may not equal sum of parts due to rounding error.

ACOE = United States Army Corps of Engineers

CDFW = California Department of Fish and Wildlife

GLA = Glenn Lukos Associates, Inc.

RWQCB = Regional Water Quality Control Board

Therefore, the Project would be required to comply with Mitigation Measure 4.4.8, which outlines the procedures for coordinating with the ACOE, CDFW, and RWQCB regarding potential jurisdictional areas and the associated permitting processes.

In addition to outlining the procedures for coordinating with ACOE, RWQCB, and the CDFW, Mitigation Measure 4.4.8 provides a range of mitigation scenarios that the resource agencies may require.

Additionally, as specified in RCM WQ-2, an erosion and sediment control plan would be prepared and submitted to the City Building Official prior to issuance of a grading or building permit in compliance with the City of Lake Forest Municipal Code. Erosion Control and Sediment Control BMPs would be designed to minimize erosion and retain sediment on site. With implementation of Erosion Control and Sediment Control BMPs, soil disturbance activities would not have the potential to contribute to the sedimentation/siltation, benthic community effects, and selenium impairments. With adherence to Mitigation Measure 4.4.8 and RCM WQ-2, impacts would be reduced below a level of significance.

The proposed Project would impact 0.95 ac that has been mapped under the San Diego Creek Watershed SAMP as an Aquatic Resource Integrity Area. The area mapped as an Aquatic Resource Integrity Area is an agricultural and developed upland area currently and historically used by the plant nursery operation. These areas were part of the nursery operation during the time the SAMP was developed, are outside of the existing riparian zone associated with Serrano Creek, and are located at an elevation of 10 feet (ft) or more above the bankfull channel of Serrano Creek. Therefore, it is believed these areas were incorrectly mapped as Aquatic Resource Integrity Areas as a result of the course level of remote-sensing-based mapping utilized to develop the SAMP.

The entirety of the existing riparian zone associated with Serrano Creek would be avoided by the proposed Project. Impacts to the riparian integrity of Serrano Creek would not occur from the development of the proposed Project because the entire riparian zone is being avoided (refer to Mitigation Measures 4.4.4 and 4.4.5). Nevertheless, Mitigation Measure 4.4.9 requires that mitigation for impacts to greater than 0.1 ac within this mapping unit be developed in coordination with the ~~ACOE~~CDFW unless the ~~ACOE~~CDFW determines that the Project site does not contain an Aquatic Resource Integrity Area (i.e., there is a mapping error in the SAMP). With implementation of Mitigation Measure 4.4.9, potential impacts related to the SAMP would be reduced below a level of significance.

Threshold 4.4.4: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. There are no wildlife corridors or wildlife nurseries on the Project site where development is proposed. Serrano Creek is considered a wildlife migration corridor, but is outside the Project footprint. Serrano Creek is an important link between the open space lands southwest and northeast of the Project site. Although Serrano Creek is in a degraded condition, it

still supports the necessary attributes needed to support animal movement, namely vegetation for cover and topography to guide animals up and downstream. The proposed Project would not directly encroach on Serrano Creek.

Nevertheless, due to the proximity of anticipated construction activities to Serrano Creek and the southern black willow forest, the proposed Project has the potential to impact active native bird nests if construction or demolition activities occur during the nesting season (January 15th to August 31st). Impacts to nesting native birds are prohibited by the MBTA and California Fish and Game Code. Therefore, Project implementation must be accomplished in a manner that avoids impacts to active nests during the nesting season. If any disturbance to the Project site (including disking, demolition, grading, or vegetation clearance) occurs between February 15th and August 31st, a qualified biologist shall conduct a nesting bird survey of the construction area and areas within 500 ft of the construction area within no more than 3 days of commencement of such activities prior. As documented in RCM BIO-1, if active nests are identified, the biologist shall establish suitable buffers (i.e., a minimum of 50 ft for passerines, 250 ft for raptors [including burrowing owls]) around the nests. The buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests. Therefore, with compliance with the MBTA and California Fish and Game Code Section 3503, the proposed Project's potential impacts on nesting birds—including Cooper's hawk and red-tailed hawk in Serrano Creek—would be less than significant.

Threshold 4.4.5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Potentially Significant. Lake Forest has a vast quantity of eucalyptus trees. These trees are endangered by the presence of a beetle identified as the eucalyptus longhorn borer (*Phoracantha semipunctata* and *Phorocantha recurve*). These beetles lay their eggs on the eucalyptus trees and the larvae bore holes within the trees, causing serious damage and destruction. The control of infestation by this beetle can be helped by regulating the maintenance of such trees in a healthy and nonhazardous condition through good arboricultural practices and by prohibiting the transportation and cutting of eucalyptus trees or logs during the period of April 1st through October 31st without a City permit. Because implementation of the proposed Project would require the removal of eucalyptus trees (including the transportation of cut logs, branches, or trunks on City streets) from the Project site, RCM BIO-2 requires the Project Applicant/Developer to comply with the City's permitting requirements (Lake Forest Municipal Code Section 6.20.025). No mitigation is required.

The polyphagous shot hole borer (PSHB) (*Euwallacea* sp.) is an invasive wood-boring beetle that attacks dozens of tree species in Southern California, including commercial avocado groves, common landscape trees, and native species in urban and wildland environments. PSHB spreads a disease called Fusarium Dieback (FD), which is caused by pathogenic fungi. Trees that are FD-susceptible may experience branch dieback, canopy loss, and, in some cases, tree mortality. Kuroshio shot hole borer (KSHB) is another ISHB species that also vectors FD. While the City does not have a specific policy related to ISHBs, with documented occurrences of both PSHB and KSHB in Lake

Forest,¹ the avoidance and preservation of Serrano Creek and its associated habitat would reduce the potential spread of invasive species (including ISHBs) because no disturbance to existing trees or transportation of tree material would occur. Additionally, Serrano Creek would be placed into a conservation easement (refer to Mitigation Measures 4.4.4, 4.4.5, and 4.4.7) or similar legal protection that would protect the lands in perpetuity. In addition, Mitigation Measure 4.4.10 requires that a survey of all on-site trees to be removed or trimmed as part of Project implementation be performed ~~at least no more than~~ 30 days prior to the commencement of construction activities. If any tree is determined to be infested/infected by ISHBs, a control plan would be prepared and provided to CDFW and the City for review and approval. At a minimum, the plan would include methods of control, removal, and appropriate disposal techniques to prevent the spread of ISHBs. With the survey and implementation of the control plan, potential impacts related to ISHBs would be reduced to below a level of significance.

The City's General Plan Recreation and Resources Element includes the following policy related to the protection of biological resources.

Policy 2.1: Conserve and protect important natural plant and animal communities, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.

As discussed in Responses to Thresholds 4.4.1 through 4.4.4, the potential impacts of the proposed Project on special-status species, riparian areas, wildlife movement corridors, and jurisdictional waters would be reduced to below a level of significance through implementation of Project-specific mitigation. Moreover, the proposed Project does not propose any changes to Serrano Creek or the adjacent southern black willow forest, which provide important habitat to plant and animal species. With implementation of Mitigation Measures 4.4.1 through 4.4.10, the proposed Project would not result in a significant impact related to local policies or ordinances protecting biological resources

Threshold 4.4.6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant Impact. The City is a participant in the Orange County Central and Coastal NCCP/HCP. According to the *Biological Technical Report* (GLA 2019; Appendix D), the Project site is located within the Orange County Central and Coastal NCCP/HCP planning area but outside the boundaries of the NCCP/HCP Reserve System. The Reserve System boundary is located approximately 3,960 ft (0.75 mi) northeast of the proposed Project site. The Project site, however, is in an area identified in the NCCP/HCP as urbanized and is located in an area designated for development. Development of the proposed Project would not result in the removal of any sensitive

¹ University of California, Division of Agriculture and Natural Resources, Invasive Shot Hole Borers, Distribution of PSHB/FD and KSHB/FD in California. Website: <https://ucanr.edu/sites/pshb/Map/> (accessed June 18, 2019).

habitat species identified in the Orange County Central and Coastal NCCP/HCP. The proposed Project would not conflict with local ordinances or the adopted HCP, NCCP, or other approved local, regional, or State HCP. Therefore, the proposed Project would result in a less than significant impact related to local ordinances and the adopted NCCP/HCP, and no mitigation is required.

4.4.7 Cumulative Impacts

Cumulative impacts are defined as the direct and indirect effects of a proposed Project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered potentially significant. "Related projects" refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed Project (refer to Table 4.A for a list of probable future projects).

4.4.7.1 Native Vegetation

Development of the Project site would permanently remove 0.29 ac of maritime succulent scrub (coastal sage scrub. This patch is a remnant and, due to its very small size and lack of contiguity with other sage scrub, is not judged to provide resource values associated with coastal sage scrub vegetation. The permanent removal of 0.29 ac of maritime succulent scrub would not make a cumulatively considerable contribution to the regional decline of this vegetation community.

Direct impacts to Serrano Creek are not proposed, but there is potential for significant indirect impacts to occur to this section of the Creek by the adjacent proposed development. Although this portion of Serrano Creek shows degradation from being adjacent to surrounding development, the potential further decline of Serrano Creek as a result of Project construction and operation would be a cumulatively considerable contribution to the regional decline of native streambed vegetated with riparian vegetation (southern black willow forest) that supports animal movement, nesting raptors, yellow warbler, and potential roosting/nursery habitat for bats. Serrano Creek and its vegetation are expected to support a degree of wildlife movement/connectivity between the natural open space lands southwest and northeast of the Project site; the connectivity between these areas would be maintained by the proposed Project. Mitigation Measures 4.4.4 and 4.4.5 would reduce indirect impacts to Serrano Creek during Project construction. These mitigation measures require the installation of construction fencing around Serrano Creek and the southern black willow forest to prevent encroachment. Mitigation Measure 4.4.5 also requires construction BMPs intended to reduce and avoid indirect impacts to vegetation and wildlife related to construction lighting, noise, dust, and the spread of exotic species. With implementation of mitigation measures, the Project's contribution to the cumulative regional decline of native streambed vegetated with riparian vegetation would be less than significant.

4.4.7.2 Raptor Use

The Project site is used by nesting Cooper's hawk and red-tailed hawk. Other species of raptors may also use the site for foraging. No direct impact to occupied nesting habitat in Serrano Creek would occur, but there is potential for potentially significant indirect impacts to occur to Serrano Creek, which may dissuade raptors from nesting along this stretch of the Creek. These two species are common to the region, and the removal of nesting habitat for these or other common species of

raptors would not make a potentially cumulatively considerable contribution to the regional decline of raptors.

The proposed Project would remove 119.77 ac of potential raptor foraging habitat through development of the active nursery. Although the nursery may provide foraging habitat for raptors, it is not expected to be valuable because the lands are actively maintained to minimize use by small mammals (prey for raptors). This loss of 119.77 ac of potential raptor foraging habitat would not make a cumulatively considerable contribution to the regional decline of raptors.

4.4.7.3 Special-Status Wildlife

Yellow warbler is present in Serrano Creek and likely nests there. This species is strongly tied to riparian habitats for nesting. During migration, yellow warbler can be seen in a wide variety of native and nonnative vegetation, including residential landscaping and native upland vegetation. Yellow warbler is a species of Special of Concern. Development of the Project would not directly impact yellow warbler, but potential indirect impacts to Serrano Creek could be appreciable. However, the number of yellow warbler potentially affected would be limited to approximately two or three pairs, and this species remains a common species to many riparian habitats. The loss of nesting habitat for yellow warbler would not make a cumulatively considerable contribution to the regional decline of this species.

There is potential for bats to roost in Serrano Creek (including western mastiff bat and western red bat). The proposed Project would not directly remove potential roosting/nursery habitat but has the potential to cause bats to abandon Serrano Creek due to indirect degradation of habitat during construction. As discussed under Threshold 4.4.1, for bats, the threshold of significance for potential impacts to bats would be if the population of bats potentially impacted is 25 or more individuals with no special status and one individual bat with a special status. The threshold of significance is set at 25 or more individuals for non-special-status bats because the loss of 25 individuals would not pose a significant loss to the regional population of any non-special-status species with potential to roost on the Project site. Given the regional decline of bats over the past several decades, this potential indirect impact would make a cumulatively considerable contribution to the regional decline of bats. Mitigation Measures 4.4.2, 4.4.4, and 4.4.5 would be implemented to reduce potential indirect cumulative impacts to bats foraging and/or roosting in Serrano Creek to a less than significant level. Mitigation Measure 4.4.2 requires bat roosting/nursery exit counts and acoustic surveys prior to the start of any construction activities. The mitigation also requires the preparation of a Bat Management Plan if the surveys find 25 or more individuals composed of non-special-status bat species¹ and/or one or more bats with a special-status in order to ensure that bat mortality does not occur during construction. Mitigation Measures 4.4.4 and 4.4.5 would reduce indirect impacts to Serrano Creek and wildlife (including bats) in the Serrano Creek corridor during Project construction. These mitigation measures require the installation of construction fencing

¹ For bats, the threshold of significance would be if the population of bats potentially impacted is 25 or more individuals with no special status and one individual bat with a special status. The threshold of significance is set at 25 or more individuals for non-special-status bats because the loss of 25 individuals would not pose a significant loss to the regional population of any non-special-status species with potential to roost on the Project site.

around Serrano Creek and the southern black willow forest to prevent encroachment. Mitigation Measure 4.4.5 also requires construction BMPs intended to reduce and avoid indirect impacts to wildlife related to construction lighting, noise, dust, and the spread of exotic species. With implementation of mitigation measures, the Project's contribution to the cumulative regional decline of bats would be less than significant.

4.4.7.4 Native Nesting Birds

There is potential for native nesting birds to be affected by development of the Project. The types of birds potentially affected are common to the region, and the number of individuals would be limited given the type of vegetation proposed for removal (agriculture, remnant patch of scrub habitat). Migratory birds are protected by the MBTA and similar provisions under the California Fish and Game Code. Based on the types of species and the expected limited number of nesting pairs potentially affected, development of the Project would not make a cumulatively considerable contribution to the regional decline of native nesting birds.

4.4.7.5 Federal and State Jurisdictional Waters

The jurisdictional waters proposed for removal are associated with the nursery operations and do not provide the functions and values of natural drainages/streambeds. As such, the removal of 0.99 ac of ACOE non-wetland waters, 0.99 ac of RWQCB non-wetland waters, and 1.91 ac of unvegetated CDFW streambed would not make a cumulatively considerable contribution to the regional decline of jurisdictional waters.

4.4.8 Level of Significance Prior to Mitigation

Potential adverse impacts to native plant communities, sensitive species, riparian habitat, jurisdictional areas, and nesting birds would be significant, and mitigation is required. The proposed Project would not conflict with any local policies or ordinances or the provisions of the NCCP/HCP. Cumulative indirect impacts to native vegetation in Serrano Creek and cumulative impacts to bat species would be significant, and mitigation is required.

4.4.9 Compliance Measures and Mitigation Measures

4.4.9.1 Regulatory Compliance Measures

RCM BIO-1 Migratory Bird Treaty Act and California Department of Fish and Game Code. In the event that any construction, vegetation clearing, or grading activities (including disking and demolition) should occur between February 1st and September 1st, a qualified biologist shall conduct a nesting bird survey within no more than 3 days of prior to commencement of construction activities to confirm the absence of nesting birds. If active nesting of birds is observed within 500 feet (ft) of the designated construction area during surveys, the biologist shall establish suitable buffers around the active nests (e.g., a minimum of 50 ft for passerines and 250 ft for raptors [including burrowing owls]). The buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests. Prior to commencement of grading activities ~~and issuance of any building permits~~, the Director of the City of Lake Forest Community Development, or

designee, shall verify that all Project grading and construction plans include specific documentation regarding the requirements of the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503, that preconstruction surveys have been completed and the results reviewed by staff, and that the appropriate buffers (if needed) are noted on the plans and established in the field with orange snow fencing.

RCM BIO-2 Tree Ordinance. In compliance with City of Lake Forest Municipal Code Section 6.20.025, if any eucalyptus trees on the Project site are to be cut or trimmed between April 1st through October 31st, the Project Applicant/Developer shall first obtain a permit from the City of Lake Forest for the transportation of any logs, branches, or trunks to an off-site location for disposal.

4.4.9.2 Mitigation Measures

Mitigation Measure 4.4.1

Burrowing Owls. A qualified biologist shall conduct a pre-construction presence/absence survey for burrowing owls no more than 14 days prior to site disturbance and submit the survey results to the Director of the City of Lake Forest Community Development Department, or designee. If burrowing owls are not detected, no further action is necessary.

If burrowing owls are detected during the pre-construction survey, the owls shall be evicted from the site (when not nesting) under the supervision of a qualified biologist and following accepted California Department of Fish and Wildlife (CDFW) protocols and as approved by the CDFW to avoid direct take of burrowing owl and compensate for the loss of habitat. Compensation for the loss of occupied burrowing owl habitat shall occur at a 1:1 ratio such that the habitat acreage and number of burrows occupied by burrowing owls impacted are replaced. As recommended ~~required~~ by the 2012 CDFW Staff Report on Burrowing Owl Mitigation, if burrowing owl are detected on the Project site, a mitigation and management plan shall be drafted and submitted to CDFW for approval, and shall ensure mitigation lands used to compensate for the loss of habitat and burrows occupied by burrowing owls are conserved and managed in perpetuity.

Mitigation Measure 4.4.2

Bats. Bat roosting/nursery exit counts and acoustic surveys shall be performed in Serrano Creek by a qualified bat biologist prior to site disturbance to determine whether Serrano Creek supports a bat nursery and/or roost and by which species. The survey results shall be submitted to the Director of the City of Lake Forest Community Development Department, or designee. This survey work shall occur in late-spring/summer and potentially again in the fall, depending on the results of the summer work. This would be determined by

the bat biologist. If the results of the bat work finds 25 or more individuals composed of non-special-status bat species and/or one or more bats with a special-status, a Bat Management Plan shall be developed to ensure bat mortality does not occur during construction. If it is determined that excluding the bats during non-breeding (generally October through March) is necessary, the Bat Management Plan shall provide details (both in text and with graphic images) where exclusion devices shall be placed, the timing for exclusion work, and the timeline and methodology needed to exclude the bats. The Bat Management Plan shall be reviewed and approved by CDFW. Prior to issuance of ~~any construction or~~ grading permits for work adjacent to Serrano Creek, documentation indicating CDFW approval of the Bat Management Plan shall be provided to the City of Lake Forest Director of Community Development, or designee.

Mitigation Measure 4.4.3

Invasive Plant Species. Prior to issuance of any building permits, the Project Applicant/Developer shall submit a final landscape plan to the Director of the City of Lake Forest Community Development Department, or designee, demonstrating that the landscaping palette for all common areas within the community does not include invasive exotic plants (i.e., those plant species rated as “high” or “moderate” in the California Invasive Plant Council’s [Cal-IPC] Invasive Plant Inventory). Prior to the first final building inspection~~issuance of certificates of occupancy~~, the Project Applicant/Developer shall submit a copy of the Homeowner Association’s (HOA) Covenants, Conditions, and Restrictions (CC&Rs) to the Director of the City of Lake Forest Community Development Department, or designee, for verification that the CC&Rs prohibit the use of invasive exotic plants in all on-site parks, open space, and other common areas. Further, the CC&Rs shall note that revisions to the HOA CC&Rs related to the maintenance of parks, open space, and other common areas shall be prohibited except with the review and approval of the Director of the City of Lake Forest Community Development Department, or designee.

Mitigation Measure 4.4.4:

Preservation of Serrano Creek During Project Construction. Prior to the start of grading or construction activities, the Director of the City of Lake Forest Community Development Department, or designee, shall verify that plans require the Project impact footprint, including any construction buffers, be staked and fenced (e.g., with orange snow fencing, silt fencing, or a material that is clearly visible). The Director of the City of Lake Forest Community Development Department, or designee, shall further verify that a qualified, experienced biologist has been retained by the Project

Applicant/Developer and that the biologist shall: (1) be present on site during all grading or vegetation removal activities occurring within 100 ft of Serrano Creek to ensure that encroachment into Serrano Creek and/or the southern black willow forest does not occur; and (2) verify the boundary is properly delineated, staked, and fenced prior to the start of any ground disturbance or vegetation clearing. The Construction Site Manager shall ensure that the staking/fencing is maintained for the duration of construction and that any required repairs are completed in a timely manner. Prior to the removal of the staking/fencing at the completion of construction activities, a qualified, experienced biologist shall conduct a final inspection of the area to ensure that encroachment into Serrano Creek and/or the southern black willow forest has not occurred. The biologist shall provide a final report to the City of Lake Forest Director of Community Development, or designee. If encroachment did occur, the biologist shall evaluate the encroachment and provide a report to both the City of Lake Forest Director of Community Development and CDFW. The City and CDFW shall determine if and what additional mitigation would be required.

Mitigation Measure 4.4.5:

Construction Best Management Practices. Prior to the start of grading or construction activities, the Director of the City of Lake Forest Community Development Department, or designee, shall verify that the plans note the following requirements:

- Any open trenches shall be covered at the end of each workday in a manner to prevent the entrapment of wildlife, or be adequately ramped to provide an animal escape route.
- Construction shall occur between 30 minutes before sunrise and 30 minutes after sunset.
- No nighttime construction within 200 ft of Serrano Creek shall occur.
- No construction lighting shall be placed within 200 ft of Serrano Creek unless a qualified biologist confirms the lighting does not illuminate Serrano Creek.
- Active construction areas shall be watered regularly (at least once every 2 hours) to control dust and thus minimize impacts on vegetation within Serrano Creek.

- Equipment operators and construction crews shall be informed of the importance of the construction limits by the biological monitor prior to any ground disturbance.
- Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the limits of disturbance and the designated staging areas and routes of travel approved by the biological monitor.
- Exotic plant species removed during construction shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the site and before leaving the site during the course of construction. The cleaning of equipment shall occur at least 300 ft from jurisdictional aquatic features, including Serrano Creek. If the location is closer, it must be approved by the biological monitor.
- Vegetation shall be covered while being transported, and vegetation materials removed from the site shall be disposed of in accordance with applicable laws and regulations.
- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances shall occur only in designated areas within the limits of disturbance and at least 200 ft from jurisdictional aquatic features, including Serrano Creek. These designated areas shall be clearly marked and located in such a manner as to contain runoff and shall be approved by the biological monitor.
- To avoid attracting predators, the Project site will be kept clear of trash and debris. All food-related trash items will be enclosed in sealed containers and regularly removed from the site.

Mitigation Measure 4.4.6:

Perimeter Glass Fencing. Prior to issuance of the first building permit, the The Project Applicant/Developer shall submit a Wall and Fencing Plan to the City of Lake Forest Director of Community Development, or designee, for review and approval. The Wall and Fencing Plan shall specify, and include details for, the use of a permanent bird strike avoidance treatment consisting of either window film (CollidEscape Clear or equivalent) or UV (ultraviolet) patterned glass (or equivalent) on all perimeter glass fencing, including but not limited to the fencing around Serrano Creek and

the radiant heat wall (refer to Figure 4.19.2: Fire Protection Plan). The Wall and Fence Plan shall include documentation addressing the bird strike avoidance effectiveness of the proposed treatment.

Mitigation Measure 4.4.7:

Habitat Management Plan. Prior to the issuance of the first building permit start of grading or construction activities, the Director of the City of Lake Forest Community Development Department, or designee, shall verify that the Project Applicant/Developer has developed a Habitat Management Plan (HMP) for the Project site. The HMP shall describe the long-term management and maintenance requirements—including funding mechanisms and monitoring—for the Open Space & Habitat & Restoration Area and the southern black willow forest. In addition, the HMP shall, at a minimum:

- Require the installation of permanent fencing along the perimeter of the Open Space & Habitat & Restoration Area and interior trails, if applicable. In addition, permanent signs shall be installed along all fencing indicating the purpose and need for the fencing and the restrictions within the Open Space & Habitat & Restoration Area. The maintenance of the fencing and signage shall be the responsibility of the HOA or a long-term land management entity.
- Require that all lighting along the perimeter of Serrano Creek, particularly street lamps, be shielded and oriented in a manner that prevents spill light or glare into the Creek. This also includes outdoor lighting for those residences abutting Serrano Creek. It shall be the responsibility of the HOA to ensure lighting is maintained consistent with these criteria.
- The Project Applicant/Developer shall place the Open Space & Habitat & Restoration Area into a conservation easement or similar legal protection, along with sufficient funds (as approved by the City of Lake Forest Director of Community Development, or designee) to protect the lands in perpetuity. In addition, lands within the conservation easement shall be managed in perpetuity by a qualified entity designated by the Project Applicant/Developer and approved by the City of Lake Forest Director of Community Development, or designee.

Mitigation Measure 4.4.8:

Jurisdictional Resources. Prior to the issuance of any grading permits, the Project Applicant/Developer shall coordinate with the United States Army Corps of Engineers (ACOE), Santa Ana Regional Water Quality Control Board (RWQCB), and the California

Department of Fish and Wildlife (CDFW) regarding their jurisdiction over the on-site drainages. The results of the Project Applicant/Developer's coordination efforts with the ACOE, RWQCB, and CDFW regarding their jurisdiction over the on-site drainages, and any mitigation measures required by the resource agencies regarding impacts on their respective jurisdictions shall be documented in a memorandum submitted to the City of Lake Forest Director of Community Development, or designee, prior to issuance of a grading permit.

The Project Applicant/Developer shall be obligated to implement/comply with mitigation measures required by the resource agencies regarding impacts on their respective jurisdictions. The ratios at which ACOE, RWQCB, and CDFW may require permanent impacts to be mitigated vary from 1:1 (no net loss) to as high as 3:1. The jurisdictional areas of the ACOE, RWQCB, and CDFW are not additive areas because the jurisdictional areas on the site may be within the jurisdiction of one or more of these agencies. Therefore, the permits and associated jurisdictional replacement requirements would identify which mitigation areas apply to the corresponding jurisdiction. At a minimum, the following shall be implemented by the Project Applicant/Developer prior to issuance of building permits:

- A detailed Habitat Mitigation Monitoring Plan (HMMP) shall be prepared that describes the location of establishment, restoration, and/or enhancement, which shall include replanting requirements, success criteria, and monitoring following construction. The HMMP shall be ~~incorporated into the regulatory agencies permit, certification, and agreement required for the proposed Project and shall be~~ subject to review and approval by the resource agencies.
- To mitigate the loss of ACOE, RWQCB, and CDFW jurisdictional waters, the Project Applicant/Developer shall create a minimum of 4.19 acres (ac) of riparian vegetation on the Project site that shall be contiguous with, and contribute to, the existing riparian canopy associated with Serrano Creek within the conservation lands. If on-site mitigation options are not feasible, the Project Applicant/Developer shall purchase credits from an approved mitigation bank/in-lieu fee program at a minimum of a 1:1 ratio, for a minimum of 1.91 ac of mitigation credits. If on-site mitigation options are not feasible and an approved mitigation bank/in-lieu fee program cannot be identified to mitigate the loss of ACOE, RWQCB, and CDFW jurisdiction, the Project

Applicant/Developer shall enhance, re-establish, or establish ACOE, RWQCB, and CDFW jurisdictional areas on off-site conserved lands at a minimum 1:1 ratio, for a minimum of 1.91 ac of enhancement, re-establishment, or establishment.

Mitigation Measure 4.4.9: **Aquatic Resource Integrity Area.** The Project site is located within the boundaries of the San Diego Creek Watershed Special Area Management Plan (SAMP). The proposed Project would result in impacts to 0.95 ac of mapped Aquatic Resource Integrity Area. Mitigation for impacts to greater than 0.1 ac within this mapping unit shall be developed in coordination with the ACOECDFW unless the ACOECDFW determines that the Project site does not contain an Aquatic Resource Integrity Area (i.e., there is a mapping error in the SAMP). Prior to the issuance of any grading permits, the Project Applicant/Developer shall provide documentation to the City of Lake Forest Director of Community Development, or designee, that (1) ACOECDFW has determined that a mapping error exists (which may be accomplished through issuance of a Letter of Permission); OR (2) the Project Applicant/Developer shall implement mitigation as specified by the ACOECDFW.

Mitigation Measure 4.4.10 **Invasive Short Hole Borers (ISHBs).** A designated biologist familiar with the signs of ISHBs shall survey trees on the Project site that are designated for removal or trimming. Surveys shall be conducted at least no more than 30 days prior to removal or trimming activities. If any tree is determined to be infested/infected by ISHBs, a control plan shall be prepared and submitted to CDFW for review and approval. At a minimum, the control plan shall include methods of control, removal, and appropriate disposal techniques to prevent the spread of ISHBs. The results of the tree survey, and if warranted, a copy of the CDFW-approved control plan shall be submitted to the City of Lake Forest Director of Community Development, or designee, prior to issuance of ~~construction~~grading permits.

4.4.10 Level of Significance after Mitigation

Potential impacts to biological resources associated with Project construction and operation would be reduced to levels that are less than significant with implementation of the mitigation measures listed above. Therefore, the proposed Project would not result in any significant unavoidable impacts related to biological resources.

4.5 CULTURAL RESOURCES

This section provides a discussion of the existing cultural resource environments and an analysis of potential impacts from implementation of the proposed Project. Cultural resources are sites, buildings, structures, objects, and districts over 50 years old that may have traditional or cultural value for the historical significance they possess. This section summarizes information obtained from a records search at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS), from the Historical Resources Evaluation Report (HRER) prepared by GPA Consulting (GPA 2018), and from the Recreation and Resources Element of the City of Lake Forest (City) General Plan (2015). The results of the records search and the HRER are contained in Appendix E of this Environmental Impact Report (EIR).

4.5.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. One comment letter included comments related to Cultural Resources.

The letter from the Native American Heritage Commission (NAHC) (August 8, 2018) recommended that an archaeological records search be conducted through CHRIS and also recommended measures in the event of discovery of human remains.

4.5.2 Existing Environmental Setting

4.5.2.1 Cultural Resources

The area that is now Lake Forest was prehistorically occupied by Native Americans. This area is primarily within the traditional boundaries of the Gabrielino, but is also along the boundary of the territory of the Juaneño. Aliso Creek, which is approximately 0.65 mile (mi) southeast of the proposed Project site, is generally accepted as the boundary of the territory between the two groups, with Gabrielino territory to the northeast and Juaneño territory to the southwest (Kroeber 1925). However, because the proposed Project is located close to the current alignment of Aliso Creek, it is in an area of potential overlap between the two tribal territories.

The Recreation and Resources Element of the City's General Plan identifies the proposed Project site as being sensitive for archaeological resources since it is located in the Aliso Creek and Foothill areas (City of Lake Forest 2015). According to the results of the records search at the SCCIC, no cultural resources have been previously recorded within the proposed Project site. There have been 25 cultural resources previously recorded within 0.5 mi of the proposed Project site, 23 of which are classified as prehistoric.

The proposed Project site currently operates as a nursery and includes a residential building constructed circa 1931 and multiple structures used for nursery operations. However, the buildings on the proposed Project site do not appear to be individually eligible for listing in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register) due to lack of significance and integrity (GPA 2018).

4.5.3 Regulatory Setting

4.5.3.1 Federal Regulations

The National Historic Preservation Act of 1966 (NHPA). The NHPA requires that the federal government list significant historic resources on the National Register. Federal agencies must consult the National Register when planning to undertake or grant approval through permits for a project. Prior to the issuance of any license or implementation of any project, the federal agency must consider the effects of a project or license on any historical buildings, sites, structures, or objects that are included on, or eligible for inclusion on, the National Register (16 United States Code [USC] Section 470(f)). This typically includes consultation with the federal agency responsible for the undertaking; the State Historic Preservation Officer (SHPO); local Native American groups and individuals; local and State historical societies and organizations; and relevant archival sources, including the appropriate facility of the CHRIS.

4.5.3.2 State Regulations

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

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

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

CEQA requires a Lead Agency to determine whether an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (*State CEQA Guidelines* Section 15064.5(c)). Prior to considering potential impacts, the Lead Agency must determine whether an archaeological cultural resource meets the definition of a historical resource in *State CEQA Guidelines* Section 15064.5(c)(1). If the archaeological cultural resource meets the definition of a historical resource, it is treated like any other type of historical resource in accordance with *State CEQA Guidelines* Section 15126.4. If the archaeological cultural resource does not meet the definition of a historical resource, then the Lead Agency determines whether it meets the definition of a unique archaeological resource as defined in PRC Section 21083.2(g). In practice, however, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource. Should the archaeological cultural resource meet

the definition of a unique archaeological resource, it must be treated in accordance with PRC Section 21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, the effects to the resource are not considered significant effects on the environment (*State CEQA Guidelines* Section 15064.5(c)(4)).

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

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

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

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

The California Register criteria are based on National Register criteria. For a property to be eligible for inclusion in the California Register, one or more of the following criteria must be met:

1. It is associated with the events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; and/or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time has passed since a resource's period of significance to "obtain a scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate

of time needed to develop the perspective to understand the resource's significance (California Code of Regulations [CCR] 4852[d][2]).

The California Register also requires that a resource possess integrity, which is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (California Office of Historic Preservation 1999:2). To retain integrity, a resource should have its original location, design, setting, materials, workmanship, feeling, and association. Which of these factors is most important depends on the particular criterion under which the resource is considered eligible for listing (California Office of Historic Preservation 1999).

4.5.3.3 Regional Regulations

There are no regional regulations that are applicable to cultural resources relevant to the proposed Project.

4.5.3.4 Local Regulations

City of Lake Forest General Plan. The existing City of Lake Forest General Plan identifies goals and policies related to cultural resources. Goal 4.0 in the Recreation and Resources Element of the City's General Plan addresses historical and archaeological resources (and potential resources), and indicates that conservation of the resources and investigation of potential resource areas is an important undertaking for connecting with the community's past (City of Lake Forest 2015: 7-8). Two policies address this goal: (1) protection of resources, and (2) identification, designation, and protection of buildings or sites of historical significance (City of Lake Forest 2015: 8).

4.5.4 Methodology

A cultural resources records search was completed on February 28, 2018, at the SCCIC of the CHRIS at California State University, Fullerton. It included a review of all prehistoric and historic archaeological sites within a 0.5 mi radius of the proposed Project, as well as a review of known cultural resource survey and excavation reports in that area. The California State Historic Resources Inventory (HRI), National Register, California Historical Landmarks (SHL), California Points of Historical Interest (SPHI), and various local historical registers were examined.

An HRER was prepared to assess the eligibility of buildings currently occupying the proposed Project site for the National Register and California Register. See Section 1.2 of the HRER (Appendix E of this EIR) for a description of the methodology used to evaluate buildings on the proposed Project site (GPA 2018: 2).

4.5.5 Thresholds of Significance

The thresholds for cultural resources impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and Form J of the City's *Local Guidelines for Implementing the California Environmental Quality Act* (2017). The proposed Project may be deemed to have a significant impact with respect to cultural resources if it would:

Threshold 4.5.1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Threshold 4.5.2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Threshold 4.5.3: Disturb any human remains, including those interred outside of formal cemeteries?

None of the thresholds for cultural resources were scoped out in the Initial Study, which is included in Appendix A. Therefore, all of the thresholds listed above are addressed in the following analysis.

4.5.6 Project Impacts

Threshold 4.5.1: Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact. The SCCIC records search results identified no previously recorded cultural resources on or in soils on the proposed Project site, and the HRER concluded that the existing buildings on the proposed Project site¹ (specifically the single-family residence and detached garage) are not a historical resource and do not appear eligible for listing in the National Register or California Register. As previously discussed, a historical resource as defined in Section 15064.5 of the *State CEQA Guidelines* can include resources listed in a local register. The existing buildings on the Project site (specifically the single-family residence and detached garage) have been recommended as ineligible for designation at a local level. As such, there are no historical resources as defined in Section 15064.5 of the *State CEQA Guidelines* located within the proposed Project site. The proposed Project will not cause a substantial adverse change in the significance of a historical resource, and no mitigation is required.

Threshold 4.5.2: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Potentially Significant. The SCCIC records search included the proposed Project site and the areas within 0.5 mi of the proposed Project site. No archaeological resources have been previously recorded in the proposed Project site. There have been 25 archaeological resources previously recorded within 0.5 mi of the proposed Project site, 23 of which are classified as prehistoric. Four previous studies have included areas of the Project site. These studies consisted of a pedestrian field survey, a cultural resources assessment, archaeological monitoring, and unspecified archaeological services. However, most of the proposed Project site has not undergone any type of cultural resources study. Due to the number of archaeological resources recorded within 0.5 mi of the proposed Project site and the location of the proposed Project site in the archaeologically sensitive Aliso Creek and Foothill areas (as identified in the City's General Plan), there is potential that ground-disturbing construction activities will impact archaeological resources. Mitigation Measure 4.5.1 requires archaeological monitoring of ground-disturbing work on the proposed Project site. If

¹ The proposed Project site is referred to as "the Property" in the HRER.

archaeological resources are encountered during ground-disturbing work, construction activities in the area of the find will stop and the resource will be evaluated for significance. Pre-established procedures, as approved by the Director of Community Development, will be in place to address any significant finds. When archaeological resources are assessed and/or protected as they are discovered, impacts to these resources would be less than significant. As such, implementation of Mitigation Measure 4.5.1 would reduce the impact of the proposed Project on the significance of archaeological resources to less than significant.

Threshold 4.5.3: Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Potentially Significant. No previously identified human remains are present on the proposed Project site, and there are no facts or evidence indicating that Native Americans or people of European descent are buried on the proposed Project site. However, undiscovered human remains may be present below the ground surface on any property. Disturbing human remains could violate the State's Health and Safety Code as well as destroy the resource. Mitigation Measure 4.5.1 requires compliance with the State's Health and Safety Code for the treatment of human remains. Implementation of Mitigation Measure 4.5.1 would reduce the impact of the proposed Project on human remains to less than significant.

4.5.7 Cumulative Impacts

Potential impacts of the proposed Project to unknown cultural I resources, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the overall loss of historical and archaeological artifacts unique to the region. As discussed above, the proposed Project will not have an impact on historical resources.

Other portions of Lake Forest are identified as sensitive for archaeological resources by the Recreation and Resources Element of the City's General Plan. However, each development proposal received by the City is required to comply with the requirements of CEQA, including an environmental review if applicable. If there were any potential for significant impacts to archaeological resources as a result of present or reasonably foreseeable projects in Lake Forest, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. When archaeological resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant.

As such, implementation of Mitigation Measure 4.5.1 would ensure that the proposed Project, together with cumulative projects, would not result in a significant cumulative impact to unique archaeological and historical resources.

4.5.8 Level of Significance Prior to Mitigation

No impacts to historical resources would occur. Prior to mitigation, the proposed Project has the potential to result in significant impacts to archaeological resources and previously undiscovered buried human remains.

4.5.9 Mitigation Measures

Mitigation Measure 4.5.1

Archaeological Resources, Tribal Cultural Resources, and Human Remains. Prior to issuance of a grading permit for any site within the Project area, a qualified archaeologist shall be retained by the Applicant for that grading permit to provide professional archaeological services. The archaeologist shall be present at the pre-grading conference to establish procedures for archaeological resource surveillance. Those procedures shall include provisions for temporarily halting or redirecting work to permit sampling, identification, and evaluation of resources deemed by the archaeologist to potentially be historical resources or unique archaeological resources under the California Environmental Quality Act (CEQA). The archaeologist also shall conduct on-site archaeological monitoring for the grading operation. Should historical resources or unique archaeological resources be discovered during the grading operation, grading activities shall be modified to allow expeditious and proper analysis and/or salvage of the resources. Disposition of the resources shall be within the discretion of the City of Lake Forest.

Prior to Approval of Grading or Improvement plans, the Applicant shall implement a grading monitoring plan to mitigate potential impacts to undiscovered buried archaeological resources on the Nakase Nursery/Toll Brothers Project to the satisfaction of the City of Lake Forest. This program shall include, but shall not be limited to, the following actions:

1. Provide evidence to the Lead Agency that a qualified archaeologist and Native American monitor have been contracted to implement a grading monitoring program to the satisfaction of the City of Lake Forest. A letter from the Project Archaeologist shall be submitted to the City of Lake Forest Director of Community Development. A letter from the Native American Monitor shall also be submitted to the City of Lake Forest Director of Community Development. The letter shall include the following guidelines:
 - a. The qualified archaeologist/historian and Native American monitor shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program.

- b. The consulting archaeologist and Native American monitor shall monitor all areas identified for development as determined by the Principal Investigator of the excavations.
- c. An adequate number of monitors (archaeological/historical/Native American) shall be present to ensure that all earth-moving activities are observed and shall be on site during all grading activities as determined by the Principal Investigator of the excavations.
- d. During the original cutting (used in this mitigation to refer to the “cut” part of “cut and fill”) of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site full time. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator.
- e. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site as determined by the Principal Investigator of the excavations. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator in consultation with the Native American monitor.
- f. Isolates and clearly non-significant deposits shall be minimally documented in the field, and the monitored grading can then proceed.
- g. In the event that previously unidentified, potentially significant cultural resources (including tribal cultural resources) are discovered, the archaeologist, in consultation with the Native American monitor(s), shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation. The archaeologist shall contact the City of Lake Forest Director of Community Development at the time of discovery. After consultation with the property owner, archaeologist, and Native American monitor(s), disposition of the resources shall be within the discretion of the City of Lake Forest. For significant cultural resources, a Research

Design and Data Recovery Program to mitigate impacts shall be prepared by the archaeologist, in consultation with the Native American monitor(s), then carried out using professional archaeological and culturally sensitive methods.

- h. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.
- i. Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods. The Principal Investigator shall determine the amount of material to be recovered for an adequate artifact sample for analysis.
- j. In the event that previously unidentified non-tribal cultural resources are discovered, those resources shall be processed and curated at a facility that meets federal standards per 36 CFR Part 79, and therefore shall be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to the John D. Cooper Archaeological and Paleontological Curation Center, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that the archaeological materials have been received and that all fees have been paid.
- k. In the event that previously unidentified cultural resources are discovered, a report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the City of Lake Forest prior to the issuance of any building permits. The report shall include California Department of Parks and Recreation Primary and Archaeological Site Forms.

- l. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the City of Lake Forest by the consulting archaeologist that the grading monitoring activities have been completed.
2. Provide evidence to the City of Lake Forest that the following notes have been placed on the Grading Plan:
 - a. The qualified archaeologist/historian and Native American monitor shall attend the pre-construction meeting with the contractors to explain and coordinate the requirements of the monitoring program.
 - b. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site to perform full-time monitoring as determined by the Principal Investigator of the excavations. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.
 - c. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site as determined by the Principal Investigator of the excavations. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator in consultation with the Native American monitor.
 - d. In the event that previously unidentified, potentially significant cultural resources (including tribal cultural resources) are discovered, the archaeologist, in consultation with the Native American monitor(s), shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation. The archaeologist shall contact the City of Lake Forest Director of Community Development at the time of discovery. After consultation with the property owner, archaeologist, and Native American monitor(s), disposition of the resources shall be within the discretion of the City of Lake Forest. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the archaeologist, in consultation with the

Native American monitor(s), then carried out using professional archaeological and culturally sensitive methods.

- e. The consulting archaeologist shall monitor all areas identified for development as determined by the Principal Investigator of the excavations.
- f. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.
- g. Prior to rough grading inspection sign-off, provide evidence that the field grading monitoring activities have been completed to the satisfaction of the City of Lake Forest. Evidence shall be in the form of a letter from the Project Archaeologist.
- h. Prior to final grading release, submit to the satisfaction of the City of Lake Forest a final report that documents the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program. The report shall also include the following:
 - 1) Department of Parks and Recreation Primary and Archaeological Site Forms.
 - 2) Evidence that all non-tribal cultural materials collected during the grading monitoring program have been curated, and therefore shall be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to the John D. Cooper Archaeological and Paleontological Curation Center, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that the materials have been received and that all fees have been paid.

3. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the City of Lake Forest by the consulting archaeologist that the grading monitoring activities have been completed.
4. The qualified archaeologist retained shall prepare monthly progress reports during monitoring to be filed with the site developer(s) and the City of Lake Forest.
5. Artifacts recovered shall be prepared, identified, and cataloged before donation to the Gabrieleno Band of Mission Indians – Kizh Nation. If the Tribe does not want custody, an accredited repository designated by the City of Lake Forest shall be utilized. Any artifacts determined to be insignificant shall be offered to local schools for use in educational programs.
6. The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The report shall include a list of specimens recovered, documentation of each locality, and interpretation of artifacts recovered, and shall include all specialists' reports as appendices.

4.5.10 Level of Significance after Mitigation

No impacts to historical resources would occur. Mitigation Measure 4.5.1 would reduce potential impacts to archaeological resources and previously undiscovered buried human remains to a less than significant level. No significant unavoidable impacts to archaeological resources or human remains would occur with implementation of these measures.

4.6 ENERGY

This section discusses energy use resulting from implementation of the Nakase Nursery/Toll Brothers Project (proposed Project) and evaluates whether the proposed Project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency. The energy use analysis in this section is based on information from the California Emissions Estimator Model™ (CalEEMod™) v2016.3.2 modeling result in the *Air Quality Impact Analysis* (Urban Crossroads 2019a) and the *Greenhouse Gas Analysis* (Urban Crossroads 2019b) prepared for the proposed Project, and from the California Air Resources Board (CARB) EMFAC2017 model. The *Air Quality Impact Analysis* and *Greenhouse Gas Analysis* are included in Appendices C and G, respectively, of this Environmental Impact Report (EIR).

4.6.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. None of the comment letters included comments related to energy.

4.6.2 Existing Environmental Setting

4.6.2.1 Electricity

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

In 2017, California's electricity was generated primarily by natural gas (33.67 percent), coal (4.13 percent), large hydroelectric (14.72 percent), nuclear (9.08 percent), and renewable sources (29 percent). Total electric generation in California in 2017 was 292,039 gigawatt-hours (GWh), up 0.5 percent from the 2016 total generation of 290,567 GWh. In 2017, California produced approximately 70.7 percent and imported 29.3 percent of the electricity it used (CEC 2019c).

The Project site is within the service territory of Southern California Edison (SCE). SCE provides electricity to more than 15 million people in a 50,000-square-mile (sq mi) area of Central, Coastal, and Southern California (SCE 2019). According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2017 was 84,291.6 GWh (28,975 GWh for the residential sector). Total electricity consumption in Orange County in 2017 was 20,030.5 GWh (6,745 GWh for the residential sector) (CEC 2019a)

Based on the CalEEMod model in the *Greenhouse Gas Analysis* (Urban Crossroads 2019b), the estimated electricity usage for the existing nursery operations on the Project site is 71,825 kilowatt-hours per year (kWh/yr).

4.6.2.2 Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels are formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills) (EIA 2019b).

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply (CEC 2019d).

The Southern California Gas Company (SoCalGas) is the natural gas service provider for the Project site. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000 sq mi service area throughout Central and Southern California, from Visalia to the Mexican border (SoCalGas 2019). According to the CEC, total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms (2,147.4 million therms for the residential sector). Total natural gas consumption in Orange County in 2018 was 575.1 million therms (339.0 million therms for the residential sector) (CEC 2019a).

According to the CalEEMod model in the *Greenhouse Gas Analysis* (Urban Crossroads 2019b) prepared for the proposed Project, the estimated natural gas use for the existing nursery operations on the Project site is 177,650 thousand British thermal units per year (kBTU/yr) or 1,776.5 therms.

4.6.2.3 Petroleum/Transportation Energy

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

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. In 2017, total gasoline consumption in California was 366,820 thousand barrels (15.4 billion gallons) or 1,853.5 trillion BTU. Of the total gasoline consumption, 350,604 thousand barrels (14.7 billion gallons) or 1,771.6 trillion BTU were consumed for transportation (EIA 2019c). Based on fuel consumption obtained from EMFAC2017, 160.5 million gallons of diesel and 1.3 billion gallons of gasoline were consumed from vehicle trips in Orange County in 2018.

According to the CalEEMod model in the *Greenhouse Gas Analysis* (Urban Crossroads 2019b) prepared for the proposed Project, the vehicles trips to and from the existing nursery result in 1,349,192 vehicle miles traveled (VMT) annually. Fuel use associated with the vehicle trips generated by the existing nursery was calculated for the existing year 2018 based on vehicle fuel consumption for Orange County provided in EMFAC2017. The vehicle fuel consumption calculations

for the existing nursery are shown in Tables 4.6.A and 4.6.B. As shown in these tables, the estimated annual fuel consumption for the nursery was 54,189 gallons of gasoline and 758 gallons of diesel fuel in 2018.

4.6.3 Regulatory Setting

This section will include applicable federal, State, regional, and City regulations.

4.6.3.1 Federal Regulations

Corporate Average Fuel Economy (CAFE). Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light-duty trucks. CAFE standards are federal regulations that are set to reduce energy consumed by on-road motor vehicles. The National Highway Traffic Safety Administration (NHTSA) regulates the standards and the United States Environmental Protection Agency (EPA) measures vehicle fuel efficiency. The standards specify minimum fuel consumption efficiency standards for new automobiles sold in the United States. The law has become more stringent over time. The current standard is 27.5 miles per gallon (mpg) for passenger cars and 20.7 mpg for light-duty trucks.

On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the United States Department of Transportation's (USDOT) NHTSA announced a joint final rule establishing a national program that would reduce greenhouse gas (GHG) emissions and improve fuel economy for new cars and trucks sold in the United States. The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016. This phase required these vehicles to meet a fuel economy standard of 35.5 mpg. The second phase applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 through 2025. This phase required these vehicles to meet an estimated fuel economy standard of 54.5 mpg (NHTSA 2019a).

On September 15, 2011, the EPA and USDOT issued a final rule for the first national standards to improve fuel efficiency of medium- and heavy-duty trucks and buses, model years 2014 through 2018. For combination tractors, the agencies proposed engine and vehicle standards that would achieve up to a 20 percent reduction in fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies proposed separate gasoline and diesel truck standards, which would achieve up to a 10 percent reduction for gasoline vehicles and a 15 percent reduction for diesel vehicles (12 and 17 percent, respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption (EPA 2019a). On October 25, 2016, the EPA and USDOT issued Phase 2 of the national standards to improve fuel efficiency standards for medium- and heavy-duty trucks and buses for model years 2021 through 2027 to achieve vehicle fuel savings as high as 25 percent, depending on the vehicle category (EPA 2019a).

Table 4.6.A: Existing Operational Trips – Fuel Efficiency

Year	Fuel	Vehicle Class	EMFAC2017 Outputs ¹			
			Fleet Mix (%) ²	Fuel Consumption (1,000 gpd)	VMT (mi/day)	Fuel Efficiency ³ (mpg)
2018	Gas	LDA	55	1,675.4	48,157,950	28.7
		LDT1	4	194.0	4,826,370	24.9
		LDT2	21	773.1	17,237,481	22.3
		MDV	12	641.6	11,751,308	18.3
		LHD1	2	142.6	1,478,337	33.8
		LHD2	1	26.7	240,658	9.0
		MHDT	2	90.2	450,967	5.0
		HHDT	2	0.2	933	4.7
		OBUS	<1	9.5	46,675	4.9
		UBUS	<1	5.3	19,592	3.7
		MCY	<1	10.5	392,562	37.4
		SBUS	<1	2.1	18,946	9.0
		MH	<1	13.6	68,130	5.0
		Fleet Mix	–	–	–	24.4
	Diesel	LDA	11	8.6	388,724	45.2
		LDT1	<1	0.1	1,243	12.4
		LDT2	2	2.8	90,639	32.4
		MDV	6	8.8	219,282	24.9
		LHD1	23	40.2	822,767	20.5
		LHD2	9	16.8	309,685	18.4
		MHDT	31	171.9	1,660,358	9.7
		HHDT	12	176.4	811,091	4.6
		OBUS	0	0.0	0	0.0
		UBUS	0	5.3	0	0.0
		MCY	0	0.0	0	0.0
		SBUS	2	2.1	42,552	20.3
		MH	3	2.8	28,828	10.3
		Fleet Mix	–	–	–	17.8
	Electric	LDA	89	0	611,218	0.0
		LDT1	2	0	9,533	0.0
		LDT2	9	0	57,582	0.0
		MDV	1	0	5,213	0.0
		Fleet Mix	–	–	–	0.0
	Natural Gas	HHDT	48	12.6	27,260	2.2
		UBUS	52	21.3	84,522	4.0
		Fleet Mix	–	–	–	3.1

Sources: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

¹ EMFAC2017 was run for Orange County for the existing year 2018. Data was aggregated over all vehicle model years and speed bins.

² Fleet mix is based on assumptions made in CalEEMod for the proposed Project.

³ The fuel efficiency was calculated by dividing the VMT (mi/day) by the fuel consumption (gpd).

CalEEMod = California Emissions Estimator Model	LHD1 = light heavy-duty truck 1	mpg = miles per gallon
CARB = California Air Resources Board	LHD2 = light heavy-duty truck 2	OBUS = other bus
gpd = gallons per day	MCY = motorcycle	SBUS = school bus
HHDT = heavy heavy-duty truck	MDV = medium-duty truck	UBUS = urban bus
LDA = light-duty automobile	MH = motor home	VMT = vehicle miles traveled
LDT1 = light-duty truck 1	MHDT = medium heavy-duty truck	
LDT2 = light-duty truck 2	mi/day = miles per day	

Table 4.6.B: Existing Operational Trips – Fuel Usage

Year ¹	Land Use	Total Annual VMT ² (mi/yr)	Fuel Type	Portion of Fleet ³ (%)	VMT by Fuel Type (mi/yr)	Fleet Mix Efficiency ⁴ (mpg)	Fuel Usage (gal/yr)
2018	Nursery	1,349,192	Gas	98	1,322,208	24.4	54,189
			Diesel	1	13,492	17.8	758
			Electric	1	13,492	N/A	0
			Natural Gas	<1	0	3.1	0

Sources: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

¹ Calculated for operational year 2018.

² Total VMT is based on project’s trip generation and trip lengths.

³ Fleet distribution is based on EMFAC2017 output and CalEEMod assumptions.

⁴ Fuel efficiency is based on fuel consumption and VMT data from EMFAC2017 for Orange County and total VMT.

CalEEMod = California Emissions Estimator Model mi/yr = miles per year
 CARB = California Air Resources Board mpg = miles per gallon
 gal/yr = gallons per year VMT = vehicle miles traveled

Safer Affordable Fuel-Efficient Vehicles Rule. On August 2, 2018, the current Administration released a notice of proposed rulemaking, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule) to amend the CAFE and GHG emission standards established in 2012 for model years 2021 through 2026. The SAFE Vehicles Rule would decrease fuel economy and would withdraw the California Waiver for the California Advanced Clean Car program, Zero Emissions Vehicle mandate, and GHG emission standards for model years 2021 through 2026. Final rulemaking on the SAFE Vehicles Rule is pending (NHTSA 2019b).

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The Act sets increased 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, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration (EPA 2019c).

Energy Policy Act of 2005. The Energy Policy Act of 2005 (42 USC Section 13201 et seq.) was passed by the United States Congress on July 29, 2005, signed into law by President George W. Bush on August 8, 2005, and was the first major energy law enacted by the federal government in over a decade. The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under this Act, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products (including hybrid vehicles), building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment (FERC 2006 and FERC 2019).

4.6.3.2 State Regulations

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

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

In compliance with the requirements of SB 1389, the CEC adopts an *Integrated Energy Policy Report* every 2 years and an update every other year. The most recently adopted reports include the *2017 Integrated Energy Policy Report* (CEC 2018a) and the *2018 Integrated Energy Policy Report Update* (CEC 2018b). The *2017 Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The *2017 Integrated Energy Policy Report* covers a broad range of topics, including implementation of SB 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas, updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency. The *2018 Integrated Energy Policy Report Update* included a review of the implementation of California's energy policies and updated the 2017 California energy demand forecasts that were adopted as part of the *2017 Integrated Energy Policy Report* proceedings.

The CEC circulated the 2019 Integrated Energy Policy Report for public review in February 2019 and is anticipated to approve the report in February 2020 (CEC 2019c).

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

Title 24, California Building Code. Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. The CBC is updated every 3 years, and the current 2016 CBC went into effect on January 1, 2017. The next update is anticipated to become effective on January 1, 2020. The efficiency standards apply to both new construction and rehabilitation of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in CCR Title 24.

California Green Building Standards Code (CALGreen). In 2010, the California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen). CALGreen took effect on January 1, 2011. CALGreen is updated on a regular basis, with the most recent update consisting of the 2016 CALGreen standards that became effective January 1, 2017. The next update is anticipated to become effective on January 1, 2020. CALGreen established mandatory measures for residential and non-residential building construction and encouraged sustainable construction practices in the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) indoor environmental quality. Although CALGreen was adopted as part of the State's efforts to reduce GHG emissions, the CALGreen standards have co-benefits of reducing energy consumption from residential and non-residential buildings subject to the standard.

California Energy Efficiency Strategic Plan. On September 18, 2008, the California Public Utilities Commission (CPUC) adopted California's first Long-Term Energy Efficiency Strategic Plan, presenting a roadmap for energy efficiency in California (CPUC 2008). The Plan articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term, and long-term strategies to assist in achieving those goals. The Plan also reiterates the following four specific

programmatic goals known as the “Big Bold Energy Efficiency Strategies” that were established by the CPUC in Decisions D.07-10-032 and D.07-12-051:

- All new residential construction will be zero net energy (ZNE) by 2020.
- All new commercial construction will be ZNE by 2030.
- 50 percent of commercial buildings will be retrofit to ZNE by 2030.
- 50 percent of new major renovations of State buildings will be ZNE by 2025.

Assembly Bill 1493, Pavley, Vehicular Emissions: Greenhouse Gases. In response to the transportation sector accounting for more than half of California’s carbon dioxide emissions, AB 1493 was enacted on July 22, 2002, requiring CARB to develop and adopt regulations that set fuel economy and GHG emission standards for passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and the EPA’s denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld in 2011 by the United States District Court for the District of Columbia.

Assembly Bill 1007, State Alternative Fuels Plan. Approved by Governor Arnold Schwarzenegger on September 29, 2005, AB 1007 required the CEC to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with CARB and in consultation with other federal, State, and local agencies to reduce petroleum consumption; increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen); reduce GHG emissions; and increase in-State production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels; result in significant improvements in the energy efficiency of vehicles; and reduce trips and vehicle miles traveled through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (AB 118, Statutes of 2007) proactively implements this plan (CEC and CARB 2007).

Executive Order S-01-07, Low Carbon Fuel Standard. Governor Arnold Schwarzenegger signed Executive Order (EO) S-01-07 on January 18, 2007. The order mandated that a statewide goal be established to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020. In particular, EO S-01-07 established a Low Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan (SIP) for alternative fuels (State Alternative Fuels Plan adopted by the CEC on December 24, 2007) and was submitted to CARB for consideration as an “early action” item under AB 32. The CARB adopted the Low Carbon Fuel Standard on April 23, 2009. After revisions in response to litigation, the Final Rulemaking Package adopting the regulation was filed with the California Office of Administrative Law (OAL) on October 2, 2015.

Title 20 Appliance Efficiency Standards. The 2006 Appliance Efficiency Regulations (20 CCR §1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California OAL on December 14, 2006. The Appliance Efficiency Regulations regulate the sale of appliances in

California and include energy performance, energy design, water performance, and water design standards for both federally regulated appliances and non-federally regulated appliances. There are 23 categories of appliances included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

Title 13 California Code of Regulations. Title 13, CCR Division 3, Chapter 9, Article 4.8, Section 2449 (General Requirements for In-Use Off-Road Diesel-Fueled Fleets) limits idling of off-road diesel-fueled vehicles (including construction vehicles) to less than 5 consecutive minutes. Title 13 CCR Division 3, Chapter 10, Article 1, Section 2485 (Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling) limits idling of commercial vehicles to less than 5 consecutive minutes. Title 13, CCR Article 1, Chapter 10, Section 2480 (Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools) regulates school bus idling at schools. A school bus must be turned off upon stopping at a school or within 100 feet (ft) of a school, and must not be turned on more than 30 seconds before beginning to depart from a school or from within 100 ft of a school. In addition, a school bus within 100 ft of a school must not idle for more than 5 consecutive minutes and must not idle for more than a cumulative 5 minutes in any 1 hour. Although these regulations are specifically for reduction of air emissions, they also reduce fuel consumption.

4.6.3.3 Regional Regulations

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

4.6.3.4 Local Regulations

City of Lake Forest Municipal Code. The City of Lake Forest has adopted the CBC (which includes CALGreen) and incorporated the CBC by reference into the City Municipal Code (Title 8, Building and Construction, Chapter 8.02 California Building Code, Article 1 General, Section 8.02.001 Adoption of the California Building Code by reference).

4.6.4 Methodology

Annual natural gas and electricity usage for operation of the existing nursery and the proposed Project were obtained from CalEEMod in the *Greenhouse Gas Analysis* (Urban Crossroads 2019b).¹

Estimates of fuel consumption (diesel fuel and gasoline) from construction trucks and construction worker vehicles were based on trip estimates from CalEEMod in the *Air Quality Impact Analysis* and fuel efficiencies from the CARB EMFAC2017. Fuel consumption (diesel fuel and gasoline) from vehicle trips during operation was estimated for the existing nursery and for the opening year (2025) of the proposed Project based on trip estimates from CalEEMod in the *Greenhouse Gas Analysis* and fuel efficiencies from the CARB EMFAC2017.

¹ The *Air Quality Impact Analysis* (Urban Crossroads 2019a) only includes the CalEEMod results for the summer and winter scenarios. Therefore, the CalEEMod results for the annual scenario for operation was obtained from the *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

4.6.5 Thresholds of Significance

The thresholds of significance for energy impacts used in this analysis are consistent with Appendix G of the State *CEQA Guidelines* and the City's *CEQA Significance Thresholds Guide* (March 2009). The proposed Project may be deemed to have a significant impact with respect to energy if it would:

Threshold 4.6.1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation

Threshold 4.6.2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

None of the thresholds of significance for energy impacts were scoped out in the Initial Study, which is included in Appendix A. Therefore, both of the thresholds listed above are addressed in the following analysis.

4.6.6 Project Impacts

Threshold 4.6.1: Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact.

Construction. Construction of the proposed Project would require energy for activities such as the manufacture and transportation of building materials, demolition and grading activities, and building construction. Construction of the proposed Project would require electricity to power construction-related equipment. The electricity used during construction would vary during different phases of construction. The majority of construction equipment during demolition grading would be gas-powered or diesel-powered, and the later construction phases would require electricity-powered equipment such as that used for interior construction and application of architectural coatings.

Construction of the Project would not involve the consumption of natural gas. The construction-related equipment would not be powered by natural gas, and no natural gas demand is anticipated during construction.

Transportation energy represents the largest energy use during construction and would occur from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction worker vehicles that would use petroleum fuels (e.g., diesel fuel and/or gasoline). Therefore, the analysis of energy use during construction focuses on fuel consumption. Construction trucks and vendor trucks hauling materials to and from the Project site would be anticipated to use diesel fuel, whereas construction workers traveling to and from the Project site would be anticipated to use gasoline-powered vehicles. Fuel consumption from transportation uses depends on the type and number of trips, VMT, the fuel efficiency of the vehicles, and travel mode.

Diesel fuel usage from construction off-road equipment was calculated using the same CalEEMod assumptions that were used in the *Air Quality Impact Analysis* (Urban Crossroads 2019a). CalEEMod utilized the construction equipment shown in Table 4.6.C. Average brake-specific fuel consumption and diesel fuel properties (heating value and density) from EPA AP-42 were used to obtain a fuel per horsepower-hour factor (EPA 1995).

Table 4.6.C: Construction Off-Road Equipment

Phase	Off-Road Equipment Type	Amount	Usage (hrs/day)	Total Usage (days)	Total Usage (hrs/equipment)
Demolition	Concrete/Industrial Saws	1	8	66	528
	Excavators	3	8	66	1,584
	Rubber-Tired Bulldozers	2	8	66	1,056
Grading	Excavators	2	8	269	4,304
	Graders	1	8	269	2,152
	Rubber-Tired Bulldozers	1	8	269	2,152
	Scrapers	2	8	269	4,304
	Tractors/Loaders/Backhoes	2	8	269	4,304
Infrastructure	Rubber-Tired Bulldozer	3	8	260	6,240
	Tractors/Loaders/Backhoes	4	8	260	8,320
Paving	Pavers	2	8	87	1,392
	Paving Equipment	2	8	87	1,392
	Rollers	2	8	87	1,392
Building Construction	Cranes	1	8	1001	8,008
	Forklifts	3	8	1001	24,024
	Generator Sets	1	8	1001	8,008
	Tractors/Loaders/Backhoes	3	8	1001	24,024
	Welders	1	8	1001	8,008
Architectural Coating	Air Compressors	1	8	1001	8,008

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

hrs/day = hours per day

hrs/equipment = hours per equipment type

These factors and other calculations are shown in Table 4.6.D. As shown in Table 4.6.D, total fuel usage from construction off-road equipment is estimated to be 290,233 gallons, the consumption of which would occur over the 5 years and 7 months of construction. As also shown in Table 4.6.D, the greatest amount of fuel (142,832 gallons) would be consumed by off-road equipment during the building construction and architecture coating phases. However, these phases would occur concurrently over 1,001 days (August 1, 2021 to June 2, 2025), which equates to an annual fuel consumption of 52,082 gallons per year. Therefore, the peak annual fuel consumption from off-road construction equipment would occur during the grading phase from February 2, 2020 to February 11, 2021, when an estimated 79,293 gallons would be consumed.

Table 4.6.D: Off-Road Construction Equipment Diesel Fuel Usage

Phase	Off-Road Equipment Type	Horsepower ¹	Load Factor ¹	Total Usage (hrs/equipment)	HP-Hour ²	Fuel Usage (gal) ³
Demolition	Concrete/Industrial Saws	81	0.73	528	31,221	1,598
	Excavators	158	0.38	1,584	95,103	4,869
	Rubber-Tired Bulldozers	247	0.40	1,056	104,333	5,342
Total Fuel Use – Demolition (11/1/19–1/31/20)						11,809
Grading	Excavators	158	0.38	4,304	258,412	13,231
	Graders	187	0.41	2,152	164,994	8,448
	Rubber-Tired Bulldozers	247	0.40	2,152	212,618	10,886
	Scrapers	367	0.48	4,304	758,193	38,819
	Tractors/Loaders/Backhoes	97	0.37	4,304	154,471	7,909
Total Fuel Use – Grading (2/2/20–2/11/21)						79,293
Infrastructure	Rubber-Tired Bulldozers	247	0.40	6,240	616,512	31,565
	Tractors/Loaders/Backhoes	97	0.37	8,320	298,605	15,289
Total Fuel Use – Infrastructure (2/12/21–2/10/22)						46,854
Paving	Pavers	130	0.42	1,392	76,003	3,891
	Paving Equipment	132	0.36	1,392	66,148	3,387
	Rollers	80	0.38	1,392	42,317	2,167
Total Fuel Use – Paving (4/1/21–7/30/21)						9,455
Building Construction	Cranes	231	0.29	8,008	536,456	27,467
	Forklifts	89	0.20	24,024	427,627	21,895
	Generator Sets	84	0.74	8,008	497,777	25,486
	Tractors/Loaders/Backhoes	97	0.37	24,024	862,221	44,146
	Welders	46	0.45	8,008	165,766	8,487
Architectural Coating	Air Compressors	78	0.48	8,008	299,820	15,351
Total Fuel Use – Building Construction and Architectural Coating (8/1/21–6/2/25)						142,832
Total Fuel Usage (gal)						290,233

Source: *Air Quality Impact Analysis* (Urban Crossroads 2019a).

¹ Load factor and horsepower are CalEEMod defaults for the equipment type and were obtained from the *Air Quality Impact Analysis*.

² HP-hour is the basis for the fuel calculation. HP-hour is calculated using the following formula: HP-hour = Total Hours x Load Factor x Horsepower.

³ Off-road mobile source fuel usage is calculated using a fuel usage rate of 0.0512 gallons of diesel per HP-hour. This is calculated based on diesel.

CalEEMod = California Emissions Estimator Model

gal = gallons

HP-Hour = horsepower-hour

hrs/equipment = hours per equipment type

Information on total fuel consumption in Orange County was not available from the United States Energy Information Administration (EIA) California State Profile and Energy Estimates (EIA 2019c). However, vehicle consumption accounts for the majority of the total fuel consumption in California. In 2018, 160.5 million gallons of diesel fuel and 1.3 billion gallons of gasoline were consumed from vehicle trips in Orange County based on EMFAC2017. Compared to the annual fuel consumption from vehicle trips in Orange County, the peak annual fuel consumption of 79,293 gallons from off-road construction equipment during grading would be a small fraction of the annual fuel consumption in Orange County.

Fuel use from construction trucks and construction worker vehicles traveling to the Project site was based on the estimated number of trips that Project construction would generate and the average trip distance using the CalEEMod assumptions in the *Air Quality Impact Analysis (Urban Crossroads 2019a)*. Fuel efficiencies were estimated for the first full year of construction (2020)

using the CARB EMFAC2017, as shown in Table 4.6.E. It should be noted that calculating the fuel efficiency of vehicles for the year 2020 is a conservative approach because fuel efficiency is expected to continue to increase and improve during each year of construction as new fuel economy standards are established. Construction-related on-road vehicle fuel consumption calculations are shown in Tables 4.6.F and 4.6.G for construction trucks and construction worker vehicles, respectively.

Table 4.6.E: Year 2020 Construction Truck and Construction Worker Vehicle Fuel Efficiency

Vehicle Type	Vehicle Class	EMFAC2017 Outputs ²		Diesel Fuel Efficiency ³ (mpg)
		Diesel Fuel Consumption (1,000 gpd)	VMT	
Construction Truck	HHDT	179.8	1,163,222	6.5
	MHDT	172.2	1,773,731	10.3
	HHDT/MHDT ¹	–	–	8.4
Construction Worker Vehicle	LDA	1624.8	48,945,590	30.1
	LDT1	194.2	5,047,196	26.0
	LDT2	721.9	1,7039,204	23.6
	Worker Mix ¹	–	–	27.5

Source: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Air Quality Impact Analysis* (Urban Crossroads 2019a).

¹ For construction trucks, assumes 50% HHDT and 50% MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks. For construction worker vehicles, assumes 50% LDA, 25% LDT1, and 25% LDT2 vehicles, consistent with assumptions in CalEEMod for worker vehicles.

² EMFAC2017 was run for Orange County for the construction year 2020. Data was aggregated over all vehicle model years and speed bins.

³ The fuel efficiency was calculated by dividing the VMT (mi/day) by the fuel consumption (gpd).

CalEEMod = California Emissions Estimator Model LDA = light-duty automobile mi/day = miles per day
 CARB = California Air Resources Board LDT1 = light-duty truck 1 mpg = miles per gallon
 gpd = gallons per day LDT2 = light-duty truck 2 VMT = vehicle miles traveled
 HHDT = Heavy Heavy-Duty Trucks MHDT = Medium Heavy-Duty Trucks

Table 4.6.F: Construction Truck Fuel Use

Phase	Trip Type	Total One-Way Trips	Trip Length (mi)	Total VMT ^{1,2}	Gasoline Fuel Efficiency (mpg) ³	Fuel Usage (gal/yr)
Diesel Vehicles						
Demolition	Hauling	404	20	16,160	6.5	2,486
Grading	Hauling	18,750	20	750,000	6.5	115,385
Building Construction	Vendor	285	6.9	3,933	8.4	468
Total Diesel Fuel Usage						118,339

Source: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Air Quality Impact Analysis* (Urban Crossroads 2019a).

¹ Assumes 50% HHDT and 50% MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks.

² EMFAC2017 was run for Contra Costa County for the construction years 2019–2023. Data was aggregated over all vehicle model years and speed bins.

³ The fuel efficiency was calculated by dividing the VMT (mi/day) by the fuel consumption (gpd).

CalEEMod = California Emissions Estimator Model HHDT = Heavy Heavy-Duty Trucks mpg = miles per gallon
 CARB = California Air Resources Board MHDT = Medium Heavy-Duty Trucks VMT = vehicle miles traveled
 gpd = gallons per day mi = miles
 gal/yr = gallons per year mi/day = miles per day

Table 4.6.G: Construction Worker Vehicle Gasoline Fuel Use

Phase	Total One-Way Trips/Day	Total Days	Trip Length (mi)	Total VMT	Gasoline Fuel Efficiency (mpg)	Fuel Usage (gal/yr)
Demolition	15	66	14.7	29,106	27.5	1,058
Grading	20	269	14.7	158,172	27.5	5,752
Infrastructure	18	260	14.7	137,592	27.5	5,003
Paving	15	87	14.7	38,367	27.5	1,395
Building Construction	834	1,001	14.7	24,544,120	27.5	892,513
Architectural Coating	167	1,001	14.7	4,914,710	27.5	178,717
Total Gasoline Fuel Usage						1,084,438

Sources: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Air Quality Impact Analysis* (Urban Crossroads 2019a).

CARB = California Air Resources Board mpg = miles per gallon
gal/yr = gallons per year VMT = vehicle miles traveled
mi = miles

As shown in Table 4.6.F, total diesel fuel consumption would be 118,339 gallons from construction truck trips. As shown in Table 4.6.G, total gasoline consumption would be 1,084,438 gallons from construction worker vehicle trips. The peak annual fuel consumption from on-road vehicles would occur during the building construction and architectural coating phases, which would occur concurrently over 1,001 days, from August 1, 2021 to June 2, 2025. During the building construction and architectural coating phases, an estimated 1,071,698 gallons of fuel (468 gallons of diesel fuel and 1,071,230 gallons of gasoline) would be consumed, which equates to 390,779 gallons annually. In 2018, 160.5 million gallons of diesel fuel and 1.3 billion gallons of gasoline were consumed from vehicle trips in Orange County based on estimates from EMFAC2017. Therefore, peak annual gasoline demand generated by on-road trips during construction would be approximately 0.07 percent of the total annual gasoline and diesel fuel consumption in Orange County.

Impacts related to energy use during construction would be temporary and relatively small in comparison to the Orange County’s overall use of the State’s available energy sources. Additionally, implementation of Regulatory Compliance Measure (RCM) EN-1 would require the construction contractor to ensure that all non-essential idling of construction equipment is restricted to 5 minutes or less in compliance with CARB Rule 2449, thus reducing transportation energy consumption. For these reasons, Project construction would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be less than significant, and no mitigation is required.

Operation. Energy use consumed by the proposed Project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the Project. Energy and natural gas consumption was estimated for the project using the CalEEMod model results in the *Greenhouse Gas Analysis* (Urban Crossroads 2019b) prepared for the proposed Project. The proposed buildings would be constructed to CALGreen standards, which were included in the CalEEMod inputs. Electricity, natural gas, and gasoline usage estimates associated with the

operation of the existing nursery and the operation of the proposed Project are shown in Table 4.6.H.

Table 4.6.H: Electricity and Natural Gas Demand from the Proposed Project

Land Use	Electricity (kWh/yr)	Natural Gas (kBTU/yr) / (therms/yr)
Existing Use		
Nursery	71,825	177,650 / 1,776.5
Proposed Use		
Elementary School	460,905	718,738 / 7,187.4
Retirement Community	429,963	900,969 / 9,009.7
Single-Family Housing	5,321,740	10,160,000 / 101,600
Total	6,212,608	11,797,707 / 117,977.7
Change from Existing	+6,140,783	+11,602,057 / 116,020.6

Source: *Greenhouse Gas Analysis* (Urban Crossroads 2019b.)
kBTU/yr = thousand British thermal units per year
kWh/yr = kilowatt-hours per year
therms/yr = therms per year

As shown in Table 4.6.H, the estimated potential increased electricity demand associated with operation of the proposed Project is 6,140,783 kWh per year (6.14 GWh per year) more than operation of the existing nursery. Total electricity consumption in Orange County in 2017 was 20,030.5 GWh. Therefore, the increased electricity demand associated with the proposed Project would be less than 0.03 percent of Orange County’s total electricity demand.

As shown in Table 4.6.H, the estimated potential increased natural gas demand associated with the proposed Project is 116,020.6 therms per year compared to the existing nursery use. Total natural gas consumption in Orange County in 2018 was 575.1 million therms. Therefore, natural gas demand associated with the proposed Project would be less than 0.02 percent of Orange County’s total natural gas demand.

The proposed Project would also result in energy usage associated with gasoline fuel consumed by Project-related vehicle trips. Fuel use associated with vehicle trips generated by the proposed Project was calculated based on the project’s trip generation estimates from CalEEMod in the *Greenhouse Gas Analysis* (Urban Crossroads 2019b) prepared for the proposed Project. The proposed Project is estimated to generate approximately 5,948,016 VMT for the elementary school, 1,086,584 VMT for the retirement community, and 19,064,105 VMT for the single-family residential uses annually. Fuel use associated with the vehicle trips generated by the proposed Project was calculated for the 2025 operational year based on vehicle fuel consumption for Orange County provided in EMFAC2017. The vehicle fuel consumption calculations for the proposed Project for the 2025 opening year are shown in Tables 4.6.I and 4.6.J.

Table 4.6.I: Proposed Project Operational Trips – Fuel Efficiency

Year	Fuel	Vehicle Class	EMFAC2017 Outputs ¹			
			Fleet Mix (%) ²	Fuel Consumption (1,000 gpd)	VMT (mi/day)	Fuel Efficiency ³ (mpg)
2025	Gas	LDA	57	1,458.1	50,397,810	34.6
		LDT1	4	185.9	5,474,703	29.4
		LDT2	21	601.6	16,783,491	27.9
		MDV	11	481.9	10,814,941	22.4
		LHD1	1	113.5	1,249,765	11.0
		LHD2	1	22.7	216,895	9.6
		MHDT	3	67.1	351,384	5.2
		HHDT	2	0.3	1,372	4.6
		OBUS	<1	8.0	43,165	5.4
		UBUS	<1	4.7	20,409	4.3
		MCY	<1	11.7	435,214	37.2
		SBUS	<1	2.6	24,717	9.5
		MH	<1	11.7	63,527	5.4
	Fleet Mix	–	–	–	29.9	
	Diesel	LDA	13	10.3	556,199	54.0
		LDT1	<1	<0.1	914	0
		LDT2	3	3.6	142,974	39.7
		MDV	7	10.5	314,811	30.0
		LHD1	25	47.2	1,065,628	22.6
		LHD2	10	20.2	411,549	20.4
		MHDT	27	173.5	1,976,807	11.4
		HHDT	10	173.0	969,310	5.6
		OBUS	0	0.0	0	0
		UBUS	0	0.0	0	0
		MCY	0	0.0	0	0
		SBUS	1	4.9	38,030	7.8
		MH	3	2.6	28,623	11.0
	Fleet Mix	–	–	–	22.0	
	Electric	LDA	74	0.0	1,893,890	0.0
		LDT1	4	0.0	95,830	0.0
		LDT2	14	0.0	251,954	0.0
		MDV	8	0.0	159,630	0.0
		Fleet Mix	–	–	–	0.0
	Natural Gas	HHDT	59	19.0	44,800	2.4
		UBUS	41	22.8	88,045	3.9
		Fleet Mix	–	–	–	3.0

Sources: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

¹ EMFAC2017 was run for Orange County for the operational year 2025. Data were aggregated over all vehicle model years and speed bins.

² Fleet mix is based on assumptions made in CalEEMod for the proposed project.

³ The fuel efficiency was calculated by dividing the VMT (mi/day) by the fuel consumption (gpd).

CalEEMod = California Emissions Estimator Model

CARB = California Air Resources Board

gpd = gallons per day

HHDT = heavy heavy-duty truck

LDA = light-duty automobile

LDT1 = light-duty truck 1

LDT2 = light-duty truck 2

LHD1 = light heavy-duty truck 1

LHD2 = light heavy-duty truck 2

MCY = motorcycle

MDV = medium-duty truck

MH = motor home

MHDT = medium heavy-duty truck

mi/day = miles per day

mpg = miles per gallon

OBUS = other bus

SBUS = school bus

UBUS = urban bus

VMT = vehicle miles traveled

Table 4.6.J: Proposed Project Operational Trips – Fuel Usage

Year ¹	Land Use	Total Annual VMT ² (mi/yr)	Fuel Type	Portion of Fleet ³ (%)	VMT by Fuel Type (mi/yr)	Fleet Mix Efficiency ⁴ (mpg)	Fuel Usage (gal/yr)
2025	Elementary School	5,948,016	Gas	92	5,472,175	29.9	183,016
			Diesel	6	356,881	22.0	16,222
			Electric	2	118,960	N/A	0
			Natural Gas	<1	0	3.0	0
	Retirement Community	1,086,584	Gas	92	999,657	29.9	33,433
			Diesel	6	65,195	22.0	2,963
			Electric	2	21,732	N/A	0
			Natural Gas	<1	0	3.0	0
	Single-Family Housing	19,064,105	Gas	92	17,538,977	29.9	586,588
			Diesel	6	1,143,846	22.0	51,933
			Electric	2	381,282	N/A	0
			Natural Gas	<1	0	3.0	0
Total Diesel Consumption per Year – Proposed Project							70,522
Total Gasoline Consumption per Year – Proposed Project							803,037
Total Diesel Consumption per Year – Existing Nursery							758
Total Gasoline Consumption per Year – Existing Nursery							54,189
Diesel Consumption – Change from Existing							+69,764
Gasoline Consumption – Change from Existing							+745,848

Sources: CARB EMFAC2017 Web Database, <https://www.arb.ca.gov/emfac/2017/>, accessed July 1–4, 2017; and *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

¹ Calculated for operational year 2025 only. Future years will likely use less fuel due to more efficient cars.

² Total VMT is based on project’s trip generation and trip lengths.

³ Fleet distribution is based on EMFAC2017 output and CalEEMod assumptions.

⁴ Fuel efficiency is based on fuel consumption and VMT data from EMFAC2017 for Orange County and total VMT.

CalEEMod = California Emissions Estimator Model

mi/yr = miles per year

CARB = California Air Resources Board

mpg = miles per gallon

gal/yr = gallons per year

N/A = not applicable

VMT = vehicle miles traveled

As shown in Tables 4.6.I and 4.6.J, the estimated annual fuel consumption for the proposed Project would be 54,189 gallons of gasoline and 758 gallons of diesel. It should be noted that the estimated operational fuel from vehicle trips associated with the proposed Project is conservatively based on the year 2025. The fuel efficiency of vehicles is expected to continue to increase and improve throughout the life of the project as new fuel economy standards are established. Therefore, the actual annual fuel consumption during operation of the proposed Project would be anticipated to decrease each year.

As shown in Table 4.6.J, vehicle trips associated with the proposed Project would consume approximately 745,848 gallons of gasoline and 69,764 gallons of diesel fuel per year. Based on fuel consumption obtained from the CARB EMFAC2017, 160.5 million gallons of diesel and 1.3 billion gallons of gasoline were consumed from vehicle trips in Orange County in 2018. Therefore, gasoline demand generated by vehicle trips associated with the proposed Project would be less than 0.06 percent of the total gasoline and diesel fuel consumption in California.

As specified in RCM AQ-4 and RCM GHG-1, the proposed Project would be constructed to CALGreen standards and appliances would be energy efficient, which would help to reduce energy and natural gas consumption. Vehicles would continue to become more efficient each

year in compliance with federal and State regulations, which would reduce fuel consumption. Additionally, school buses would be required to limit idling, which reduces fuel consumption, as specified in RCM EN-2. The proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. Impacts related to consumption of energy resources during operation would be less than significant, and no mitigation is required.

Threshold 4.6.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

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

The CEC recently adopted the *2017 Integrated Energy Policy Report* (CEC 2018a) and the *2018 Integrated Energy Policy Report Update* (CEC 2018b). The Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The Integrated Energy Policy Report covers a broad range of topics, including implementation of SB 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas, updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency. The City of Lake Forest relies on the State integrated energy plan and does not have its own local plan to address renewable energy or energy efficiency.

As indicated above, energy usage on the Project site during construction would be temporary in nature and would be relatively small in comparison to the overall use in the County. In addition, energy usage associated with operation of the proposed Project would be relatively small in comparison to the overall use in Orange County, and the State's available energy sources and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the Project's total impact on regional energy supplies would be minor, the proposed Project would not conflict with or obstruct California's energy conservation plans as described in the CEC's Integrated Energy Policy Report. Additionally, as demonstrated above under Threshold 4.6.1, the proposed Project would not result in the inefficient, wasteful, and unnecessary consumption of energy. Potential impacts related to conflict with or

obstruction of a State or local plan for renewable energy or energy efficiency would be less than significant, and no mitigation is required.

4.6.7 Cumulative Impacts

Please refer to Table 4.A and Figure 4.0.1 in Section 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, for the descriptions and locations of the related projects considered in the cumulative impact analysis.

The geographic area for electricity service is that of the SCE boundaries, while the geographic area for natural gas service is that of the SoCalGas boundaries. The proposed Project would result in an increased services demand in electricity and natural gas. Although the proposed Project would result in a net increase in electricity, this increase would not require SCE to expand or construct infrastructure that could cause substantial environmental impacts. As discussed previously, the total annual electricity consumption in the SCE service area in 2017 was 84,291.6 GWh. By 2030, consumption is anticipated to increase by approximately 12,000 GWh for the low-demand scenario and by 22,000 GWh for the high-demand scenario (CEC 2018c). While this forecast represents a large increase in electricity consumption, the Project's percent of cumulative consumption would be less than 0.008 percent. The Project, in combination with cumulative development, is well within SCE's system-wide net annual increase in electricity supplies over the 2018 to 2030 period, and there are sufficient planned electricity supplies in the region for estimated net increases in energy demands.

Similarly, additional natural gas infrastructure is not anticipated due to cumulative development. Total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms. Between 2018 and 2035, total natural gas consumption in the SoCalGas service area is forecast to remain steady for the low- and mid-demand scenarios and to increase by approximately 650 million therms in the high-demand scenario due to intense energy efficiency efforts (CEC 2018c). The Project's percent of cumulative consumption of natural gas in the SoCalGas service area would be less than 0.003 percent. It is anticipated that SoCalGas would be able to meet the natural gas demand of the related projects without additional facilities. In addition, both SCE and SoCalGas demand forecasts include the growth contemplated by the Project and the related projects. SCE and SoCalGas plan to continue to provide reliable service to its customers and upgrade their distribution systems as necessary to meet future demand.

Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and to the total number of vehicle trips and VMT throughout Orange County and the region. The proposed Project and related projects are required to comply with various federal and State government legislation to improve energy efficiency in buildings, equipment, and appliances, and reduce VMT. Increased energy efficiency to comply with building energy efficiency standards will reduce energy consumption on a per-square-foot basis. In addition, utility companies are required to increase their renewable energy sources to meet the Renewable Portfolio Standards mandate of 60 percent renewable supplies by 2030. Further, compliance with the existing regulatory requirements and project design features would ensure that the proposed Project does not result in

an inefficient, wasteful, and unnecessary consumption of energy. Therefore, the proposed Project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable, and no mitigation is required.

4.6.8 Level of Significance Prior to Mitigation

Energy impacts related to the inefficient, wasteful, and unnecessary consumption of energy as well as impacts due to conflicts or obstruction of a State or local plan for renewable energy or energy efficiency would be less than significant, and no mitigation is required.

4.6.9 Regulatory Compliance Measures and Mitigation Measures

4.6.9.1 Regulatory Compliance Measures

The following RCMs are applicable South Coast Air Quality Management District (SCAQMD) Rules. The City of Lake Forest considers these requirements to be mandatory; therefore, they are not mitigation measures.

- RCM EN-1 California Code of Regulations, Title 13, General Requirements for In-Use Off-Road Diesel-Fueled Fleets.** The construction contractor shall ensure that all non-essential idling of construction equipment and delivery vehicles is restricted to 5 minutes or less in compliance with California Code of Regulations (CCR) Title 13, Division 3, Chapter 9, Article 4.8, Section 2449 and CCR Title 13, Division 3, Chapter 10, Article 1, Section 2485. Prior to issuance of any grading or building permits, the City of Lake Forest Director of Community Development, or designee, shall confirm that plans include notes with this requirement.
- RCM EN-2 California Code of Regulations, Title 13, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.** During operation, all school bus drivers shall comply with CCR Title 13, Article 1, Chapter 10, Section 2480 to limit bus idling at schools. School bus shall be turned off upon stopping at the school or within 100 feet of the school. School buses shall not be turned on more than 30 seconds before beginning to depart from the school or from within 100 feet of the school. School bus within 100 feet of the school shall not idle for more than 5 consecutive minutes and shall not idle for more than a cumulative 5 minutes in any 1 hour.
- RCM AQ-4 California Code of Regulations, Title 24.** Prior to issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and green building standards.
- RCM GHG-1 California Code of Regulations, Title 20, Appliance Energy Efficiency Standards.** Appliances installed in project buildings shall comply with the energy efficiency requirements in CCR Title 20, Appliance Energy Efficiency Standards. All appliances shall be Energy Star appliances.

4.6.9.2 Mitigation Measures

The proposed Project would not result in significant impacts related to energy use, and no mitigation is required.

4.6.10 Level of Significance after Mitigation

Energy impacts during construction and operation would be less than significant.

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4.7 GEOLOGY AND SOILS

This section provides a discussion of the existing geologic and soils environment and an analysis of potential impacts from implementation of the proposed Project. This section also addresses the potential for structural damage due to the local geology underlying the proposed Project site, as well as slope stability, ground settlement, soil conditions, grading, and regional seismic conditions. This section also evaluates potential impacts to paleontological resources. Data used to prepare this section were taken from the *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical, Inc. 2017) and the *Preliminary Geotechnical Exploration* (NMG Geotechnical, Inc. 2018) (both of which are included in Appendix F in this Environmental Impact Report [EIR]), as well as the City of Lake Forest General Plan (City of Lake Forest 2015), the City of Lake Forest Municipal Code, numerous State and federal studies of geologic and seismic hazards in the vicinity of Lake Forest, site-specific investigations in the Project area, and field observations.

4.7.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. No comments related to geology and soils were received during the IS/NOP public review period.

4.7.2 Existing Environmental Setting

4.7.2.1 Project Site

Historically, the Project site has been used primarily for agricultural production. From 1938 through the late 1960s, the Nakase Nursery was developed with orchards. In the late 1960s, the northwestern portion of the Project site continued operation as an orchard while the remainder of the Project site was developed as a plant nursery. In 1988, the orchards were removed, and the entire Project site has been used as an agricultural wholesale plant nursery since the 1990s. The 122-acre (ac) Project site is currently operating as the Nakase Brothers Wholesale Nurseries.

The Project site is bounded on the northwest by Bake Parkway, on the northeast by Rancho Parkway, on the southeast by Serrano Creek and Serrano Creek Trail, and on the southwest by commercial, industrial, and office uses, with Dimension Drive beyond. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the Project site.

According to the 2018 geotechnical report (NMG Geotechnical, Inc. 2018), in the existing condition, the topography of the Project site is gently sloping hillside terrain ranging in elevation from 675 feet (ft) in the southwestern portion to 750 ft in the central portion. It appears the Project site was lowered along portions of Bake Parkway by 3 to 8 ft and from the northern flank of the bedrock ridge by 5 to 12 ft, and that material was placed in the northern portion of the Project site to level out the topography.

4.7.2.2 Regional Geology

The Project site is located within the Los Angeles Basin, a northwest-trending alluviated lowland situated at the north end of the Peninsular Ranges geomorphic province of coastal Southern California. The Los Angeles Basin is bounded on the north by the Santa Monica Mountains and the Elysian, Repetto, and Puente Hills, and bounded on the east and southeast by the Santa Ana Mountains and San Joaquin Hills. The Los Angeles Basin is subdivided into four primary structural blocks that are distinguished from one another by contrasting basement rock types and stratigraphy. The Project site is located within the boundaries of the southwestern block of the Los Angeles Basin, most of which is a low plain that extends from Santa Monica at the northwest to Long Beach to the southeast.

4.7.2.3 Local Geology and Subsurface Conditions

The City of Lake Forest comprises about 17 square miles in a transition zone between an elevated coastal terrace and the Santa Ana Mountains. The western portion of Lake Forest, on the coastal terrace, is about 200 ft in elevation. The land becomes progressively higher and steeper to the east, eventually reaching elevations above 1,500 ft along the ridgeline of the Santa Ana Mountains.

Traces of fault segments associated with the Newport-Inglewood Fault Zones parallel the ocean edge of the coastal terrace. Traces of the Elsinore Fault Zone follow the ridge of the Santa Ana Mountains.

The geology of the region is complex and has undergone several alternating periods of subsidence and uplift, mass wasting (erosion), and sediment deposition. In the Santa Ana Mountains, igneous, metavolcanic, and metasedimentary rocks of Jurassic age (201.3 million to 145.0 million years ago) and younger form the core of the range. The exposed rocks in the mountainous areas are slightly metamorphosed volcanics, which have been intruded by granitic rocks of Cretaceous age (145.0 million to 66.0 million years ago), principally granites, gabbros, and tonalites. Overlying these rocks are about 15,000 ft of younger sandstones, siltstones, and conglomerates of upper Cretaceous age, composed largely of material eroded from the older igneous and metavolcanic rocks now underlying the Santa Ana Mountains. The valleys of creeks and washes cross the city, providing additional topographic relief in the foothills and on the coastal terrace. In Lake Forest, Aliso Creek, Serrano Creek, and Borrego Canyon Wash are major waterways whose ancestral channels cut deeply into the marine sediments of the terrace during the lower sea levels of the last Ice Age in late Pleistocene time. Over the last 17,000 years, the rivers have filled their channels to their present levels with unconsolidated sand, silt, and gravel (alluvium).

The subsurface investigation revealed that the majority of the Project site is underlain by deep quaternary alluvium deposited in three distinct canyons trending roughly northeast across the site. The central canyon and Serrano Creek merge together at the site, and the canyon parallel to Bake Parkway extends through the site. The quaternary alluvium is exposed throughout the majority of the site in the old canyon areas. The alluvium consisted of silty to clayey sands with occasional layers of gravel and beds of silt and clay. Based on the collected data and experience on adjacent properties, the alluvium is most likely up to 70 to 80 ft thick in the deepest part of the old canyons.

Slope wash is exposed on the lower flanks of the main bedrock ridge and the tips of the ridges exposed along Bake Parkway and Rancho Parkway. This material is similar to colluvium.

Undocumented fill covers the alluvium in the northern half of the site and along Serrano Creek. Based on a comparison of the 1949 United States Geological Survey (USGS) topographic map to the current topography, the site has been raised about 5 to 15 ft along Serrano Creek and about 4 to 10 ft adjacent to Rancho Parkway. Sandstone of the Capistrano Formation is exposed in the ridge in the south-central portion of the Project site and in limited exposure along Bake Parkway and Rancho Parkway. Bedding generally dips at low angles (8 to 19 degrees) northeast and northwest.

4.7.2.4 Local Groundwater Conditions

Groundwater is present within the alluvium beneath the site. The groundwater encountered during the geologic evaluation ranged from 20 to 45 ft deep. Based on maps published by the State of California, the historic high groundwater levels at the site ranged from 15 to 20 ft deep. Currently, there is a water-well located in the southwest corner of the site that provides irrigation water for the nursery operation.

4.7.2.5 Fault Systems and Seismic Conditions

The faulting and seismicity of Southern California are dominated by the San Andreas Fault Zone. The San Andreas Fault Zone separates two of the major tectonic plates that comprise the earth's crust. West of the San Andreas Fault Zone lies the Pacific Plate. This plate is moving northwest relative to the North American Plate, which is east of the San Andreas Fault Zone. This relative movement between the two plates is the driving force of fault ruptures in the western portion of Southern California. The San Andreas Fault generally trends northwest-southeast. North of the Transverse Ranges Province, the fault trends more in an east-west direction, causing a north-south compression between the two plates. The rate of north-south compression in Southern California has been estimated at between 5 and 20 millimeters per year. This compression has produced rapid uplift of many of the mountain ranges in Southern California, including those surrounding the Los Angeles Basin.

There are numerous faults in the Los Angeles Basin that are categorized as active, potentially active, and inactive. A fault is classified as active if it has either moved during the Holocene epoch (the last 10,000 to 11,500 years) or is included in an Alquist-Priolo Earthquake Fault Zone (as established by the California Geological Survey [CGS], formerly the Division of Mines and Geology). A fault is classified as potentially active if it has experienced movement during the Quaternary period (the last 1.8 million years), but shows little or no evidence of movement during the Holocene. Faults that have not moved in the last 1.8 million years generally are considered inactive. Surface displacement can be recognized by the existence of cliffs in alluvium, terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts.

The most significant active fault traces in the vicinity of Lake Forest are along the Newport-Inglewood and Elsinore Fault Zones, which are considered active. The Newport-Inglewood Fault Zone was responsible for both the 1933 Long Beach Earthquake and the 1920 Inglewood Earthquake. This zone is visible on the surface as a series of northwest-trending elongated hills

extending from Newport Beach to Beverly Hills, including Signal Hill and Dominguez Hills. The fault zone exhibits as much as 6,000 ft of right-lateral displacement that has occurred since mid-Pliocene time, about 3.4 million years ago, with a maximum displacement of 10,000 ft since late Miocene time, at least 5.3 million years ago. Active or potentially active fault segments of the Newport-Inglewood Fault Zone closest to Lake Forest include the north and south branches of the Newport-Inglewood Fault.

Other known active segments of faults at greater distances from Lake Forest that could pose seismic groundshaking hazards for the Project site include those of the Palos Verdes Fault Zone (about 26 miles [mi] southwest of the city), the San Jacinto Fault Zone (about 35 mi northeast of the city), the San Andreas Fault Zone (about 43 mi northeast of the city), the Sierra Madre Fault Zone (about 32 mi north of the city), and the Santa Monica–Raymond Fault Zone (about 42 mi northwest of the city).

There are no active faults within or immediately adjacent to the Project site based on review of the reports and maps published by the CGS. The closest active fault is the San Joaquin Hills Blind Thrust Fault, located 3.9 mi southwest of the site.

4.7.2.6 Liquefaction and Lateral Spreading

Soil liquefaction is a phenomenon that occurs during strong ground shaking, most commonly in generally low- to medium-density, saturated, low-cohesion soils, where the soils experience a temporary loss of strength and behave essentially as a fluid. In extreme cases, the soil particles can become suspended in groundwater, resulting in the soils becoming mobile and fluid like. Intervals of loose sand may, therefore, be subject to liquefaction if these materials are or were to become submerged and also exposed to strong seismic ground shaking. This loss of support can produce local ground failure such as settlement or lateral spreading that may damage overlying improvements. As discussed in the 2018 geotechnical report (NMG Geotechnical, Inc. 2018), a significant portion of the Project site along the southern edge parallel to Serrano Creek is located within a potential liquefaction zone as defined by the State's seismic hazard mapping.

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or “unconfined” face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and is often associated with liquefaction. Because of the potential for liquefaction in the Project site and the proximity of the Project site to Serrano Creek, there is a potential for lateral spreading at the site as a result of seismic activity.

Secondary seismic hazards, such as tsunami or seiche, are considered negligible because the site is located away from the ocean and confined bodies of water and is at elevations well above sea level (700± ft).

4.7.2.7 Subsidence

Subsidence refers to broad-scale changes in the elevation of land. Common causes of land subsidence are pumping water, oil, and gas from underground reservoirs; dissolution of limestone

aquifers (sinkholes); collapse of underground mines; drainage of organic soils, and initial wetting of dry soils (hydrocompaction). Subsidence is also caused by heavy loads generated by large earthmoving equipment. The Project site is not located within an area of known subsidence that may be associated with groundwater, peat loss, or oil extraction.¹

4.7.2.8 Seismically Induced Ground Settlement

This type of secondary seismic effect can result in damage to property when an area settles to different degrees over a relatively short distance. The sinking or settlement of a structure, area of fill, or other imposed load is usually the result of densification of the underlying soil. Soils susceptible to seismically induced settlement typically include loose granular materials. Ground settlement could occur on sites within a short distance of alluvial valleys or where a site is partially on bedrock formation, or partially on fill with inadequate internal compaction or consolidation of unsuitable soils. According to the geotechnical evaluation conducted by NMG Geotechnical, Inc. in 2017, there is a potential for minor settlement of the quaternary alluvium underlying the majority of the Project site.

4.7.2.9 Expansive Soils

Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out. According to the 2018 geotechnical report (NMG Geotechnical, Inc. 2018), on-site soils are granular in nature and are expected to have low to medium expansion potential.

4.7.2.10 Corrosive Soils

Corrosive soils contain chemical constituents that cause damage to construction materials such as concrete and ferrous metals. One such constituent is water-soluble sulfate, which, if high enough in concentration, can react with and damage concrete. Electrical resistivity, chloride content, and percentage of hydrogen (pH) levels are indicators of the soil's tendency to corrode ferrous metals. The geotechnical evaluation conducted by NMG Geotechnical, Inc. in 2017 determined that on-site soils are expected to be corrosive to metals.

4.7.2.11 Seismically Induced Landslides

The downslope movement of loose rock or soil is a potential secondary seismic effect that can occur during strong ground shaking. The proposed Project is not located within an area of earthquake-induced landslides, as defined by the State's seismic hazard mapping.

¹ United States Geological Survey (USGS). California Water Science Center, Areas of Land Subsidence in California Map. Website: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html (accessed June 13, 2019).

4.7.2.12 Paleontological Resources

The land within Lake Forest is mapped as containing 28 different geologic units, ranging in age from less than 200 years old to approximately 66 million years old (De Novo, 2018: 9-45 to 9-46). Geologic mapping by Morton and Miller (2006) indicates the Project site contains Holocene to late Pleistocene (less than 126,000 years ago) Young Alluvial Fan Deposits (i.e., Quaternary alluvium as described in Section 4.7.2.3) and the late Miocene to early Pliocene Oso Member of the Capistrano Formation (described in Section 4.7.2.3 as the Capistrano Formation). The marine Capistrano Formation is divided into two members, one informal and one formal: the siltstone member and the Oso Member, which is the member mapped in the Project site (Morton and Miller, 2006). These two members are laterally equivalent and date to the latest Hemphillian North American Land Mammal Age (approximately 7–4.9 million years ago) (Barnes and Raschke, 1991; Morton et al., 1976). Although not mapped by Morton and Miller (2006), as noted in Section 4.7.2.3, undocumented fill is also present at the surface in the Project site.

While undocumented fill may contain fossils, these fossils have been removed from their original location and are thus out of stratigraphic context. Therefore, they are not considered important for scientific study. With the exception of undocumented fill, the geologic units within the Project site have the potential to produce scientifically important paleontological resources. Pleistocene sediments similar to those found at depth in the Young Alluvial Fan Deposits have produced scientifically important fossils elsewhere in Orange County and the region (Bell et al., 2004; Jefferson 1991a, 1991b; Miller, 1971; Reynolds and Reynolds, 1991; Springer et al., 2009). Fossils from this time include large and small mammals, reptiles, fish, invertebrates, and plants. The Oso Member of the Capistrano Formation has produced specimens of algae, land plants, bivalves, gastropods, molluscs, bryozoans, echinoderms, shrimp, sharks, rays, bony fish, sea turtles, crocodiles, birds, dolphins, whales, sea lions, sea cows, walruses, camels, elephants, horses, and rhinoceros (Fierstine, 2008; Minch and Hull, 1993; Minch and Leslie, 1994; Schoellhamer et al., 1981; Sundberg, 1991). Moreover, the Recreation and Resources Element of the City's General Plan identifies the proposed Project site as being sensitive for important paleontological resources (City of Lake Forest, 2015).

4.7.3 Regulatory Setting

4.7.3.1 Federal Regulations

There are no federal regulations for geology and soils that are applicable to the proposed Project.

4.7.3.2 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act (1972). The Alquist-Priolo Earthquake Fault Zoning Act of 1972 and updates (California Public Resources Code [PRC], Section 2621, et seq.) is the principal California State guidance to prevent the construction of habitable structures on the surface trace of active earthquake faults. If an active fault is found, a structure for human occupancy must be set back from the fault (generally 50 ft). The Alquist-Priolo Earthquake Fault Zoning Act only addresses the hazard of surface fault rupture; it does not consider other earthquake hazards. There are no known earthquake fault zones on or in the near vicinity of the Project site; therefore, regulations recommended by the CGS for investigations conducted in such zones do not specifically apply.

Seismic Hazard Mapping Act (1990). The Seismic Hazard Mapping Act (SHMA) was adopted by the State in 1990 to address the potential hazards posed by secondary effects of seismic activity, including strong ground shaking, soil liquefaction, and associated ground failure and seismically induced landslides. The CGS 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. The seismic hazard zones are referred to as “zones of required investigation” because site-specific geological investigations are required for construction projects located within these areas. Before a project can be permitted, a geologic investigation, evaluation, and written report must be prepared by a licensed geologist to demonstrate that the potential hazards can be successfully mitigated.

California Building Code (2016). The California Code of Regulations (CCR), Title 24, Part 2, the California Building Code (CBC), provides minimum standards for building design in the State. Local codes are permitted to be more restrictive than Title 24, but not less restrictive. The procedures and limitations for the designs of structures are based on site characteristics, occupancy type, configuration, structural system height, and seismic design category. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in California Occupational Safety and Health Administration (Cal/OSHA) regulations (CCR, Title 8).

California Health and Safety Code. Sections 17922 and 17951–17958.7 of the California Health and Safety Code require cities and counties to adopt and enforce the current edition of the CBC, including a grading section. The City has adopted these provisions by reference (Title 8, Chapter 8.02, Section 8.02.001 of the City of Lake Forest Municipal Code) and also includes amendments to the CBC (Title 8, Chapter 8.02, Section 8.02.020 of the City’s Municipal Code). Sections of Volume 2 of the CBC specifically apply to select geologic hazards. Chapter 16 of the 2016 CBC addresses requirements for seismic safety. Chapter 18 regulates excavation, foundations, and retaining walls. Chapter 33 contains specific requirements pertaining to site demolition, excavation, and construction.

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

Construction General Permit. Stormwater discharges from construction activities in California are regulated by the State Water Resources Control Board (SWRCB) *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-009-DWQ, NPDES No. CAS000002 (Construction General Permit). The Construction General Permit regulates construction activity that disturbs of at least 1 ac of total land area. The Construction General Permit requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that describes the Erosion Control and Sediment Control Best Management Practices (BMPs) that would be implemented during construction to control erosion and sedimentation, particularly during storm events.

4.7.3.3 Local Regulations

North Orange County MS4 Permit. The City is a co-permittee of an NPDES Municipal Separate Storm Sewer System (MS4) permit for North Orange County. The Santa Ana Regional Water Quality Control Board (RWQCB) *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff, Orange County, Order No. R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062 (North Orange County MS4 Permit)* regulates stormwater discharges into the City's MS4 system (i.e., storm drain system) and surface waters. The MS4 Permit stipulates operational requirements for new development and significant redevelopment, including implementation of Source Control, Site Design, Low Impact Development (LID), and Treatment Control BMPs to address pollutants of concern in stormwater runoff during operation. As specified by the North Orange County MS4 Permit, the proposed project is considered a "priority" project because it is a redevelopment project that would add or replace at least 5,000 square feet (sf) or more of impervious surface. As a priority project, the proposed Project is required to prepare a Water Quality Management Plan (WQMP) and implement BMPs to address pollutants in stormwater runoff, including pollutants associated with erosion, during operation. Please refer to Subsection 4.9.3, Regulatory Setting, in Section 4.9, Hydrology and Water Quality, of this EIR for additional discussion of the North Orange County MS4 Permit.

City of Lake Forest General Plan Safety and Noise Element. The Safety and Noise Element addresses hazards as mandated in State law (Government Code Section 65302(g)). This element also serves as a comprehensive program to identify and temper environmental factors that potentially threaten community health and safety. The Safety and Noise Element contains policies and programs to regulate existing and proposed development located in hazard-prone areas.

The following goal and policy apply to the proposed Project:

Goal 1.0 Reduction in the risk to the community from hazards associated with geologic conditions, seismic activity, and flooding.

Policy 1.1 Reduce the risk of impacts from geologic and seismic hazards.

City of Lake Forest General Plan Recreation and Resource Element. The existing City of Lake Forest General Plan identifies goals and policies related to cultural resources. Goal 4.0 in the Recreation and Resources Element of the City's General Plan addresses historical, archaeological, and paleontological resources (and potential resources) and indicates that conservation of the resources and investigation of potential resource areas is an important undertaking for connecting with the community's past (City of Lake Forest 2015: 7-8).

The following goal and policy apply to the proposed Project:

Goal 4.0 Conservation of important historic, archaeological, and paleontological resources.

Policy 4.1 Protect areas of important historic, archaeological, and paleontological resources.

City of Lake Forest Municipal Code, Chapter 8.02. Chapter 8.02 of the City's Municipal Code includes the adoption of the CBC by reference and amendments to the CBC.

- **Section 8.30.030** adopts the CBC for the purpose of prescribing regulations for the erection, construction, enlargement, alteration, repair, improving, removal, conversion, demolition, occupancy, equipment, use, height, area and maintenance of all buildings and structures. The California Building Code, 2016 Edition, is based on the 2015 International Building Code as published by the International Code Council with the amendments provided in Section 8.02.020.
- **Section 8.30.020** outlines amendments to the 2016 CBC, including modifications to design, plan review, permit, and payment of fee requirements.

City of Lake Forest Municipal Code, Chapter 8.30. Chapter 8.30 of the City's Municipal Code regulates grading and excavation activities.

- **Section 8.30.030** requires a grading permit obtained from the City Engineer prior to any grading, clearing of brush, grubbing excavation, or any other land disturbance activities.
- **Section 8.30.058** requires a soil engineering and engineering geology report for grading projects. The reports shall include information appropriate for the site including any information required by the City Engineer. Recommendations included in the reports and approved by the City Engineer shall be incorporated in the grading plans or specifications.
- **Section 8.30.100** specifies that cut slopes shall be no steeper than two horizontal to one vertical (2:1) unless otherwise recommended in the soil engineering or engineering geology report and approved by the City Engineer.
- **Section 8.30.110** specifies that unless otherwise approved by the City Engineer and recommended in the approved soil engineering report, fills shall conform to Subarticle 9 of the grading manual. The provisions therein may be waived for minor fills not intended to support structures upon written request by the applicant on a form prescribed by the City Engineer.
- **Section 8.30.150** specified that grading activities be undertaken in compliance with NPDES and City requirements. Each grading project shall implement BMPs to ensure that discharges of pollutants are effectively prohibited and will not cause or contribute to an exceedance of water quality standards. Section 8.30.150 also specifies that, prior to the issuance by the City of a grading permit, the Department of Public Works and/or Development Services Department shall review the project plans.
- **Section 8.30.152** species that projects with a grading permit shall submit an erosion control plan to the Building Official for approval by September 15th of each year.

City of Lake Forest Municipal Code, Chapter 15.14. Chapter 15.14 of the City's Municipal Code regulates stormwater quality and prohibits discharges of pollutants into surface waters unless the discharge is authorized by an NPDES permit.

- **Section 15.14.040** requires all new development and redevelopment projects to comply with the requirements of the North Orange County MS4 Permit. Section 15.14.040 specifies that, prior to the issuance of a grading permit or building permit, the Department of Public Works and/or Development Services Department shall review the project plans.
- **Section 15.14.050** requires preparation of an erosion and sediment control plan as a condition of approval for issuance of a construction or grading permit. Section 15.14.050 also requires implementation of construction BMPs to ensure that the discharge of pollutants from the site will be effectively prohibited and will not cause or contribute to an exceedance of water quality standards. Section 15.14.050 specified that construction and grading activities be undertaken in compliance with NPDES and City requirements.
- **Section 15.14.060** requires implementation of operational BMPs on all sites that have the potential to discharge a pollutant to the City's MS4.

4.7.4 Methodology

To assess the impacts of the proposed Project with respect to geologic and soil conditions, geotechnical investigation and field explorations were undertaken by NMG Geotechnical, Inc. in 2017 and 2018. The discussion below describes the scope of the geotechnical exploration.

- **Background Research and Data Review:** Various sources, including published geologic maps, historic stereographic aerial photographs, and data pertinent to the subject site were acquired and reviewed by NMG Geotechnical, Inc. in 2017 and 2018.
- **Site Reconnaissance:** Site reconnaissance and subsurface explorations of the Project site were conducted by NMG Geotechnical, Inc. in 2017 and 2018.
- **Field Investigation:** Preliminary field investigations were conducted by NMG Geotechnical, Inc. in 2017 and 2018 to identify subsurface conditions on the Project site related to soil types, groundwater, liquefaction, corrosive soils, and settlement. In 2017, the field investigation included drilling, logging, and sampling six hollow-stem auger borings (B-1 through B-6) to depths of 51.5 to 55 ft below ground surface (bgs) and advancing 13 cone penetrometer test (CPT) soundings (CPT-1 through CPT-13) to depths of 50 ft bgs. In 2018, 21 hollow-stem augered borings were drilled, logged, and sampled (B-1 through B-21) on the Project site to depths of 25.5 to 55 ft bgs; 23 CPT soundings (CPT-1 through CPT-23) were advanced to depths of 50 ft bgs; and 22 trench/test pits (T-1 through T-22) were excavated to depths of up to 16 ft bgs.
- **Geotechnical Laboratory Testing:** In 2017 and 2018, NMG Geotechnical, Inc. conducted limited laboratory testing on selected samples to determine in-situ moisture and density, consolidation potential, shear strength, expansion potential, grain size distribution, and maximum density/optimum moisture content.

Per the City's General Plan, the proposed Project site is sensitive for paleontological resources; therefore, no paleontological field studies or locality searches were conducted because the paleontological sensitivity of the proposed Project site was previously determined.

Paleontological resources and soils, geology, and seismic hazards were assessed with respect to significance within the context of Appendix G of the *State CEQA Guidelines*.

4.7.5 Thresholds of Significance

The thresholds for geology and soils impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's CEQA Significance Thresholds Guide (March 2009). The proposed Project may be deemed to have a significant impact with respect to geology and soils if it would:

- Threshold 4.7.1(i):** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
- Threshold 4.7.1(ii):** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking
- Threshold 4.7.1(iii):** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction
- Threshold 4.7.1(iv):** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides
- Threshold 4.7.2:** Result in substantial soil erosion or the loss of topsoil
- Threshold 4.7.3:** 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
- Threshold 4.7.4:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
- Threshold 4.7.5:** 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

Threshold 4.7.6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

The Initial Study, included as Appendix A, substantiates that there would be no impacts associated with Thresholds 4.7.1(i), 4.7.1(iv), and 4.7.5. These thresholds will not be addressed in the following analysis.

4.7.6 Project Impacts

Threshold 4.7.1(ii): Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Potentially Significant Impact. As with all of Southern California, the Project site is subject to strong ground motion resulting from earthquakes on nearby faults. There are several faults in the vicinity of the Project site that are capable of producing strong ground motion. The San Joaquin Hills Blind Thrust Fault is the closest active fault, located 3.9 mi southwest of the Project site. Other major regional active faults include Whittier-Elsinore, Newport-Inglewood, San Jacinto, and San Andres Faults. During an earthquake along any of these faults or faults in the region, seismically induced ground shaking would be expected to occur. The severity of the shaking would be influenced by the magnitude of the earthquake, the distance of the Project site to the seismic source, the soil conditions, and the depth to groundwater.

Peak ground acceleration (PGA) is a measure of earthquake acceleration on the ground and an important input parameter for earthquake engineering. Based on the geotechnical evaluation conducted in 2017 (NMG Geotechnical, Inc. 2017), a PGA of 0.53g was identified for the Project site. This acceleration is consistent with other areas in this region of California that are underlain by similar geologic materials and indicates that strong seismic ground shaking generated by seismic activity is considered a potentially significant impact that may affect people or structures associated with the proposed Project. Mitigation Measure 4.7.1 and Regulatory Compliance Measure (RCM) GEO-1 require the applicant to comply with the recommendations of a Final Geotechnical Evaluation and the most current CBC adopted by the City as its Building Code, which stipulates appropriate seismic design provisions that shall be implemented with Project design and construction. With implementation of Mitigation Measure 4.7.1 and RCM GEO-1, potential project impacts related to seismic ground shaking would be reduced to a less than significant level.

Threshold 4.7.1(iii): Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Potentially Significant Impact. Liquefaction occurs when saturated, cohesionless soils temporarily lose shear strength (liquefy) due to increased pore water pressures induced by strong ground motion during an earthquake. Structures on or above potentially liquefiable soils may experience bearing capacity failures due to the temporary loss of foundation support, vertical settlements, and/or lateral spreading. Factors known to influence the potential for liquefaction include soil type, relative density, grain size, confining pressure, depth to groundwater, and the intensity and duration

of the seismic ground shaking. Assessment of liquefaction potential for a particular site requires knowledge of a number of regional and site-specific parameters, including the estimated design earthquake magnitude, the distance to the assumed causative fault, and the associated probable peak horizontal ground acceleration at the site, subsurface stratigraphy, and soil characteristics. Parameters such as distance to causative faults and estimated probable peak horizontal ground acceleration were determined using published references and online computer programs by the United States Geological Survey (USGS). Stratigraphy and soil characteristics were determined by means of a site-specific subsurface investigation combined with appropriate laboratory analysis of representative samples of on-site soils.

As discussed above, a significant portion of the Project site along the southern edge parallel to Serrano Creek is located within a potential liquefaction zone as defined by the State's seismic hazard mapping. As previously discussed, groundwater was observed at depths of 20 to 45 ft. These depths are generally consistent with published maps that indicate the historic high groundwater level in the vicinity of the Project site, which ranged from 15 to 20 ft deep. Because of the granular nature of some of the layers within the alluvium and the shallow groundwater over most of the site, there is a potential for liquefaction to occur during a future major earthquake, impacting the Project site.

Mitigation Measure 4.7.1 and RCM GEO-1 require the applicant to comply with the recommendations of a Final Geotechnical Evaluation and the most current CBC adopted by the City as its building code, which stipulates appropriate seismic design provisions that shall be implemented with Project design and construction. Adherence to the Seismic Zone 4 soil and foundation support parameters and the grading requirements in the CBC and City of Lake Forest Municipal Code will ensure the maximum practicable protection available from soil failure under static or dynamic conditions for structures and their associated trenches, slopes, and foundations. With implementation of Mitigation Measure 4.7.1 and RCM GEO-1 potential project impacts related to seismically induced liquefaction would be reduced to a less than significant level.

Threshold 4.7.2: Would the Project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. As discussed in Section 4.9, Hydrology and Water Quality, during construction activities, soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions due to soil disturbance and the exposure of soil to weather conditions (e.g., wind and rain). During a storm event, soil erosion and loss of topsoil could occur at an accelerated rate. As specified in RCM WQ-1, the project would comply with the requirements of the Construction General Permit. Under the Construction General Permit, the project would be required to prepare a SWPPP and implement the construction BMPs detailed in the SWPPP during construction. In addition, as specified in RCM WQ-2 in Section 4.9, Hydrology and Water Quality, an erosion and sediment control plan would be prepared and submitted to the Director of the City of Lake Forest Public Works Department, or designee, prior to issuance of a grading or building permit. An erosion and sediment control plan would also be prepared annually during construction and submitted to the Director of the City of Lake Forest Public Works Department, or designee, for approval prior to September 15th of each year during construction. The SWPPP and erosion and sediment control plans would detail the BMPs to be implemented during construction. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to

minimize erosion and retain sediment on site. With implementation of Erosion Control and Sediment Control BMPs, as required by RCM WQ-1 and RCM WQ-2, construction impacts related to erosion or the loss of topsoil would be less than significant.

As also discussed in Section 4.9, Hydrology and Water Quality, in the proposed condition, 80.3 ac (65.8 percent) of the Project site would be impervious surface area and not prone to on-site erosion or siltation because no soil would be included in these areas. The remaining 41.7 ac (41.7 percent) of the site would consist of pervious area, which would contain landscaping that would minimize on-site erosion and siltation by stabilizing the soil. However, the proposed project would increase impervious area on the Project site by 68.2 ac, which would result in a net increase in storm water runoff that can lead to downstream erosion in receiving waters (Serrano Creek). However, as specified in RCM WQ-3, the proposed Project would be required to comply with the hydromodification requirements of the North Orange County MS4 Permit and reduce stormwater runoff from the Project site so it does not exceed pre-development runoff rates or time of concentration by more than 5 percent. To achieve this, the proposed Project would include a subsurface detention vault below Central Park, underground detention vaults in combination with proprietary biotreatment BMPs at each of the five neighborhood parks, a biotreatment facility along Serrano Creek, and a linear biotreatment facility along "A" Street. These features will reduce flows during storm events so it does not exceed pre-development runoff rates or time of concentration by more than 5 percent. Compliance with the hydromodification requirements of the North Orange County MS4 Permit, as specified in RCM WQ-3, would ensure that the proposed Project would not result in downstream erosion impacts. For these reasons, operation impacts related to substantial soil erosion or loss of topsoil would be less than significant, and no mitigation is required.

Threshold 4.7.3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Landslides and Unstable Slopes.

Potentially Significant. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking. Because the site is located in a relatively flat area, landslides or other forms of natural slope instability do not represent a significant hazard to the project. In addition, as stated above, the site is not within a State-designated hazard zone for Earthquake-Induced Landslide. Therefore, potential impacts related to landslides would be less than significant, and no mitigation is required.

Slope stability issues do exist along the edge of the Project site adjacent to Bake Parkway and Rancho Parkway. Additional soil testing and borings will be required to determine graded conditions beneath the roadbed (e.g., fill thickness, topsoil/colluvium left in place, subdrains installed). Depending on the final grading plan for the proposed Project and the results of additional soil testing, a structural setback may be required to prevent undermining the existing road or excessive differential settlement induced by new fill loading that would cause structure damage to planned structures. Mitigation Measure 4.7.1 and RCM GEO-1 require the applicant

to comply with the recommendations of a Final Geotechnical Evaluation and the most current CBC adopted by the City as its building code. With implementation of Mitigation Measure 4.7.1 and RCM GEO-1, potential project impacts related to slope stability and differential settlement would be reduced to a less than significant level.

Lateral Spreading.

Potentially Significant. Lateral spreading often occurs on very gentle slopes or flat terrain. The dominant mode of movement is lateral extension accompanied by shear or tensile fracture. This failure is caused by liquefaction and is usually triggered by rapid ground motion, such as that experienced during an earthquake, but can also be artificially induced. When coherent material, either bedrock or soil, rests on materials that liquefy, the upper units may undergo fracturing and extension and may then subside, translate, rotate, disintegrate, or liquefy and flow. During the subsurface investigation, the potential for lateral slope failure was explored with CPTs advanced to 50 ft deep, in selected areas along the perimeter of Serrano Creek. Due to the effects of liquefaction potential in the alluvium during a significant seismic shaking event, the exposed slope associated with Serrano Creek may be subject to lateral slope failure. According to the geotechnical evaluations prepared for the proposed Project (NMG Geotechnical, Inc. 2017, 2018), a seismic shear key would be required to reduce impacts related to lateral spreading to a less than significant level. The top of the front cut for the sheet key would start at the environmental setback boundary and would extend along the Serrano Creek edge. The actual dimensions of the key would depend on additional subsurface exploration and site-specific analysis to be performed as part of the preparation of the Final Geotechnical Report. With implementation of these recommendations in accordance with Mitigation Measure 4.7.1, potential impacts related to lateral spreading would be reduced below a level of significance.

Subsidence.

No Impact. Subsidence refers to broad-scale changes in the elevation of land. Common causes of land subsidence are pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils (hydrocompaction). Subsidence is also caused by heavy loads generated by large earthmoving equipment. The Project site is not located within an area of known subsidence that may be associated with groundwater, peat loss, or oil extraction.¹ Therefore, the proposed Project would not be subject to potential geotechnical hazards related to subsidence, and no mitigation is required.

Unsuitable Soils.

Potentially Significant. The results of the subsurface investigation within the Project site indicate that approximately 200,000 yards of fill were placed to create the site conditions. Given that this fill is undocumented, it is unlikely that most of the on-site fill materials were placed in

¹ United States Geological Survey (USGS). California Water Science Center, Areas of Land Subsidence in California Map. Website: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html (accessed June 13, 2019).

accordance with current grading standards and certified by a geotechnical professional. It is assumed that remedial grading was not performed for this work and that the undocumented fill is underlain by unsuitable alluvium. Therefore, the future settlement behavior of the existing on-site fill under the loading conditions during operation of the proposed Project cannot be accurately predicted, and the on-site fill is considered unsuitable for support of the proposed buildings and associated site improvements. As described in Mitigation Measure 4.7.1, to mitigate differential settlement in the design cut-and-fill transition areas, over-excavation will be performed. Undocumented fill and any soft or poor quality fill¹ would also be removed during remedial grading. Provided design and remedial grading are performed in accordance with the applicable requirements in the CBC adopted by the City as its building code with certain amendments (RCM GEO-1), excessive settlement resulting from compression of existing undocumented fill and alluvial soils on the Project site would be reduced to a less than significant level.

Corrosive Soils.

Potentially Significant Impact. Corrosive soils contain constituents or physical characteristics that attack concrete (water-soluble sulfates) and/or ferrous metals (chlorides, ammonia, nitrates, low pH levels, and low electrical resistivity). Corrosive soils could potentially create a significant hazard to the project by weakening the structural integrity of the concrete and metal used to construct the building and could potentially lead to structural instability. Structural damage and foundation instability caused by corrosive soils is a potentially significant impact.

As discussed previously, on-site soils are not corrosive to concrete but are very corrosive to metals. Project impacts related to corrosive soils would be less than significant with implementation of Mitigation Measure 4.7.2. Mitigation Measure 4.7.2 requires protection of ferrous metals and copper against corrosion. Corrosion protection may include, but is not limited to, sacrificial metal, the use of protective coatings, and/or cathodic protection. With implementation of Mitigation Measure 4.7.2, potential impacts related to corrosive soils would be reduced to a less than significant level.

Threshold 4.7.4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact. Expansive soils are characterized by their ability to undergo substantial volume changes (shrink or swell) due to variations in moisture content as a result of precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors. Liquefaction may result in unacceptable settlement or heave of structures or concrete slabs supported on grade. According to the geotechnical evaluations prepared for this project (NMG

¹ Fill dirt used in construction projects must meet specifications outlined by the project's geotechnical engineer. Generally, good quality, inorganic, clean fill dirt from subsoil consists of at least 50 percent clay and does not contain any additives or dangerous materials (e.g., refuse, rubble, muck, metal, glass, wood, or other foreign materials).

Geotechnical, Inc., 2017, 2018), on-site soils are generally granular in nature and are expected to have low to medium expansion potential. Therefore, the potential for expansive soils impacting the proposed Project is considered to be less than significant, and no mitigation is required.

Threshold 4.7.6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Potentially Significant Impact. According to the City of Lake Forest General Plan, the proposed Project site is located in an area that has been previously determined as sensitive for paleontological resources. As such, it is possible that ground-disturbing construction activities could impact significant previously undiscovered paleontological resources. To mitigate adverse impacts to unknown buried paleontological resources that may exist on site, Mitigation Measure 4.7.3 requires that an Orange County Certified Paleontologist be retained to develop a Paleontological Resources Impact Mitigation Program (PRIMP), that paleontological monitoring occur during ground-disturbing activities in paleontologically sensitive deposits, and that a final paleontological monitoring report be prepared describing the results of the monitoring effort. The PRIMP should follow guidelines developed by the Society of Vertebrate Paleontology and should include, but not be limited to, the methods that will be used to protect paleontological resources that may exist within the Project site, as well as procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading. Implementation of Mitigation Measure 4.7.3 would ensure that impacts to paleontological resources are reduced below a level of significance.

4.7.7 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for geology and soils. Typically, geology and soils impacts are specific to a particular Project site and there is little, if any, cumulative relationship between the development of a proposed project and development within a larger cumulative area. Moreover, while seismic conditions are regional in nature, seismic impacts on a given Project site are site-specific. For example, development within the Project site would not alter geologic events or soil features/characteristics (e.g., ground shaking, seismic intensity, or soil expansion or compression). Therefore, for geology and soils, the study area considered for the cumulative impact of other projects consisted of (1) the area that could be affected by proposed Project activities, and (2) the areas affected by other projects whose activities could directly or indirectly affect the geology and soils of the Project site. In general, only projects occurring adjacent to or very close to the Project site were considered. None of the 11 cumulative projects identified in Table 4.A (Section 4.0) are located adjacent to or in the immediate vicinity of the proposed project, and therefore would not contribute to cumulative geology and soils impacts.

In addition, the proposed Project, as well as foreseeable projects, would be required to comply with the applicable State and local requirements, including but not limited to the CBC that has been adopted by the City as its building code. Therefore, the Project-specific geology and soils impacts, as well as the impacts associated with other projects, would be reduced to a less than significant level.

Seismic impacts are a regional issue and are also addressed through compliance with applicable codes and design standards. For these reasons, the Project's contribution to cumulative geotechnical and soil impacts is less than significant.

Potential impacts of the proposed Project to unknown paleontological resources and unique geologic features, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the overall loss of paleontological remains unique to the region. However, each development proposal received by the City is required to undergo environmental review pursuant to the California Environmental Quality Act (CEQA). If there were any potential for significant impacts to paleontological resources or unique geologic features, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant.

As such, implementation of Mitigation Measure 4.7.3 would ensure that the proposed Project, together with cumulative projects, would not result in significant cumulative impacts to unique paleontological resources or unique geologic features.

4.7.8 Level of Significance Prior to Mitigation

The potential for surface fault rupture, erosion, subsidence, landslides, and expansive soil is less than significant, and no mitigation is required. The potential impacts related to seismic shaking, liquefaction, lateral spreading, settlement due to undocumented fill, and corrosive soil would be potentially significant prior to mitigation. The proposed Project would also have potential impacts on paleontological resources prior to mitigation.

4.7.9 Regulatory Compliance Measures and Mitigation Measures

4.7.9.1 Regulatory Compliance Measures

The following RCM is a requirement of the CBC that is applicable to the proposed Project and is considered in the analysis of potential impacts related to geology and soils. The City of Lake Forest considers these requirements to be mandatory; therefore, they are not mitigation measures.

RCM GEO-1 California Building Code Compliance Seismic Standards. Structures and retaining walls shall be designed in accordance with the seismic parameters presented in the geotechnical evaluations prepared for this project (NMG Geotechnical, Inc., 2017, 2018) and applicable sections of Section 1613 of the most current California Building Code (CBC). Prior to issuance of building permits for planned structures, the Project soils engineer and the Director of Public Works, or designee, shall review building plans to verify that the structural design conforms to the requirements of the geotechnical study and the City of Lake Forest Municipal Code.

4.7.9.2 Mitigation Measures

In addition to regulatory requirements, the following mitigation measures would reduce potential impacts related to seismic ground shaking, liquefaction, and compressible/collapsible soils to a less than significant level.

Mitigation Measure 4.7.1

Incorporation of and compliance with the recommendations in the Project Geotechnical Assessment. All grading operations and construction shall be conducted in conformance with the recommendations included in the geotechnical evaluations for the Project site prepared by NMG Geotechnical, Inc., specifically the *Geotechnical Evaluation of Proposed Residential and School Site Development, Nakase Property, Lake Forest, California* dated April 19, 2017, and the *Preliminary Geotechnical Exploration, Proposed Development, Nakase Nursery, Tentative Tract 18142, Lake Forest, Orange County, California* dated July 13, 2018. Specific recommendations in the geotechnical evaluations address the following and shall be incorporated into the final Project plans and construction-level geotechnical report:

1. Removal of undocumented fill on the northern half of the Project site during remedial grading.
2. Removal of any soft or poor quality fill during remedial grading. If some of this material cannot be removed in order to prevent undermining the existing road, then a structural setback would be required to protect the planned structures from excessive differential settlement induced by the new fill loading.
3. Compact fill placement to reduce the potential for surface manifestations of liquefaction during seismic shaking.
4. Installation of a seismic shear key in the vicinity of Serrano Creek to mitigate the potential of lateral slope failure due to the effects of liquefaction potential in the alluvium during a significant seismic shaking event.
5. Evaluation of the stability of the slopes. If existing slopes are to essentially remain in place to ensure they have been graded to a standard that resulted in a 1.5 safety factor for gross and surficial stability. If there are any deficiencies with the existing slope, they would have to be regraded to project standards or a structural setback established to protect the planned structures.
6. Over-excavation to mitigate differential settlement in the design cut-and-fill transition areas.

7. Placement of cement-treated soil or equivalent to be installed along the southeastern edge of the seismic shear key to protect the planned development from future potential erosion associated with the adjacent Serrano Creek.

Additional site testing and final design evaluation shall be conducted by the Project Geotechnical Consultant to refine and enhance these requirements. The Project Applicant/Developer shall require the Project Geotechnical Consultant to assess whether the requirements in that report need to be modified or refined to address any changes in the Project features that occur prior to the start of grading. If the Project Geotechnical Consultant identifies modifications or refinements to the requirements, the Project Applicant/Developer shall require appropriate changes to the final Project design and specifications. Design, grading, and construction shall be performed in accordance with the requirements of the City of Lake Forest (City) Municipal Code (Title 8) and the California Building Code (CBC) applicable at the time of grading, appropriate local grading regulations, and the requirements of the Project Geotechnical Consultant as summarized in a final written report, subject to review by the City of Lake Forest Director of Public Works, or designee, prior to commencement of grading activities.

Grading plan review shall also be conducted by the Director of Public Works or designee prior to the start of grading to verify that the requirements developed during the geotechnical design evaluation have been appropriately incorporated into the project plans. Design, grading, and construction shall be conducted in accordance with the specifications of the Project Geotechnical Consultant as summarized in a final report based on the CBC applicable at the time of grading and building, and the City's Building Code. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and the City of Lake Forest Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into project plans. Prior to final of grading permits, the Project geotechnical engineer shall submit a Final Testing and Observation Geotechnical Report for Rough Grading to the City of Lake Forest Director of Public Works/City Engineer, or designee..

Mitigation Measure 4.7.2

Corrosive Soils. Prior to issuance of ~~the first~~ a building permit, the Director of the City of Lake Forest Public Works Department, or designee, shall verify that the Project Applicant/Developer has retained the services of a licensed corrosion engineer to provide detailed corrosion protection measures. Where steel may come in

contact with on-site soils, project construction shall include the use of steel that is protected against corrosion. Corrosion protection may include, but is not limited to, sacrificial metal, the use of protective coatings, and/or cathodic protection. Additional site testing and final design evaluation regarding the possible on-site presence of significant volumes of corrosive soils shall be performed by the Project Geotechnical Consultant to refine and enhance these recommendations. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and City of Lake Forest Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into Project plans.

Mitigation Measure 4.7.3

Paleontological Resources Impact Mitigation Program. Prior to the issuance of the first preliminary ~~or precise~~ grading permit, the Project Applicant/Developer shall provide a letter to the Director of the City of Lake Forest Community Development Department, or designee, stating that they have retained a qualified paleontologist (defined as a practicing paleontologist that is recognized in the paleontological community and proficient in vertebrate paleontology) who is listed on the County of Orange list of certified paleontologists. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for this Project. The PRIMP shall include the methods that will be used to protect paleontological resources that may exist within the Project site, as well as procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology.

Excavation and grading activities in deposits with high paleontological sensitivity shall be monitored by a paleontological monitor following a PRIMP. No monitoring is required for excavations in deposits with no or low paleontological sensitivity.

If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find in order to assess its significance. In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected and a paleontologist shall be contacted to assess the find for significance.

Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a scientific institution.

Prior to issuance of the first building permit approval of any occupancy permits, a report of findings shall be prepared to document the results of the monitoring program.

4.7.10 Level of Significance after Mitigation

With implementation of RCM GEO-1 and Mitigation Measures 4.7.1, 4.7.2, and 4.7.3, all identified potentially significant impacts related to geotechnical hazards and paleontological resources would be reduced below a level of significance.

4.8 GREENHOUSE GAS EMISSIONS

This section provides a discussion of global climate change (GCC), existing regulations pertaining to GCC, and an analysis of greenhouse gas (GHG) emissions associated with the proposed Nakase Nursery/Toll Brothers Project (proposed Project). This section summarizes information provided in the *Nakase Property Greenhouse Gas Analysis* (Urban Crossroads 2019b) prepared for the proposed Project. The *Nakase Property Greenhouse Gas Analysis* is included in Appendix G of this Environmental Impact Report (EIR).

4.8.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. One comment letter included comments related to GHG emissions. The letter from the California Department of Transportation (Caltrans) (August 13, 2018) suggests incorporating practices and policies into the Area Plan to reduce GHG emissions in accordance with Assembly Bill (AB) 32 and Senate Bill (SB) 375.

4.8.2 Existing Environmental Setting

4.8.2.1 Global Climate Change

GCC refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These gases, which trap heat in the atmosphere, are often referred to as GHGs. These particular gases are important due to their residence time (the duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the Earth's atmosphere but prevent radioactive heat from escaping, thus warming the Earth's atmosphere.

GHGs are released into the atmosphere by both natural and anthropogenic (human) activity. Without the natural GHG effect, the Earth's average temperature would be approximately 61 degrees Fahrenheit (°F), cooler than it currently is. The cumulative accumulation of GHGs in the Earth's atmosphere is considered to be the cause for the observed increase in the Earth's temperature. Higher global temperatures have many secondary effects:

- Increased air pollution
- Health effects such as risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat
- Changes in precipitation and snow melt
- Rising sea levels
- Reduction in agricultural production
- Increased abundance and range of invasive species and pests

- Increased risk of wildfire
- Alteration of natural ecosystems

These effects are detailed further in the *Nakase Property Greenhouse Gas Analysis (Urban Crossroads 2019b)*.

GCC is currently one of the most controversial environmental issues in the United States, and much debate exists within the scientific community about whether or not GCC is occurring naturally or as a result of human activity. Some data suggest that GCC has occurred over the course of thousands or millions of years. These historical changes to the Earth's climate have occurred naturally without human influence, as in the case of an ice age. However, many scientists believe that the climate shift taking place since the industrial revolution (1900) is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that GCC is the result of increased concentrations of GHGs in the Earth's atmosphere, including CO₂, CH₄, N₂O, and fluorinated gases. Many scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

4.8.2.2 Primary Greenhouse Gases

The following discussion summarizes the characteristics of the primary GHGs:

- **Water Vapor (H₂O):** Water vapor is the most abundant, important, and variable GHG in the atmosphere. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include: evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves. Water vapor is not considered a pollutant. In the atmosphere, water vapor maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedback related to the warming of the atmosphere rather than a direct result of industrialization. A climate feedback is an indirect, or secondary, change, either positive or negative, that occurs within the climate system in response to a forcing mechanism. The feedback loop in which water is involved is critically important to projecting future climate change, and is described below.

As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor, absorb more thermal energy, and warm the atmosphere. This cycle continues and is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown because there are also dynamics that hold the positive feedback loop in check. For example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds that are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

- **Carbon Dioxide (CO₂):** CO₂ is an odorless and colorless GHG. CO₂ is emitted from natural and man-made sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood. CO₂ is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks.

Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO₂ concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30 percent. Left unchecked, the concentration of CO₂ in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources.

- **Methane (CH₄):** CH₄ is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO₂ and its lifetime in the atmosphere is brief (10 to 12 years) compared to other GHGs. Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil-fuel combustion and biomass burning.
- **Nitrous Oxide (N₂O):** N₂O, also known as laughing gas, is a colorless GHG. Concentrations of N₂O began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). N₂O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil-fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant (e.g., in whipped cream bottles). It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the Earth's surface, and be converted to other compounds by chemical reaction.
- **Chlorofluorocarbons (CFCs):** CFCs are gases formed synthetically by replacing all hydrogen atoms in CH₄ or ethane (C₂H₆) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (i.e., the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and CFCs are no longer being used. As a result, the levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

- **Hydrofluorocarbons (HFCs):** HFCs are synthetic, man-made chemicals that are used as a substitute for CFCs in applications such as automobile air conditioners and refrigerants. Out of all the GHGs, they are one of the groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a ($\text{CF}_3\text{CH}_2\text{F}$), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant hydrofluorocarbon emissions were of HFC-23. HFC-134a emissions are increasing due to its use as a refrigerant. The United States Environmental Protection Agency (EPA) estimates that concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each, and that concentrations of HFC-152a are about 1 ppt.
- **Perfluorocarbons (PFCs):** PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above the Earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primarily aluminum production and semiconductor manufacture.
- **Sulfur Hexafluoride (SF_6):** SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. Out of all the GHGs, they are one of the groups with the highest global warming potential. The EPA indicates that concentrations in the 1990s were about 4 ppt. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

4.8.2.3 Greenhouse Gas Inventories

This section summarizes the latest information on global, national, California, and local GHG emission inventories.

Global Emissions. Worldwide anthropogenic (human) GHG emissions are tracked by the Intergovernmental Panel on Climate Change (IPCC) for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Human GHG emissions data for Annex I nations are available through 2016. For the Year 2016, the sum of these GHG emissions totaled approximately 28,747,554 gigagrams (Gg) of carbon dioxide equivalent (CO_2e).

United States Emissions. California emitted 6,511,302 million metric tons of CO_2e (MMT CO_2e) in 2016. The United States, as a single country, was the number two producer of GHG emissions in 2016 (behind China). The primary GHG emitted by human activities in the United States was CO_2 , representing approximately 81.6 percent of total GHG emissions. CO_2 from fossil fuel combustion, which is the largest source of GHG emissions in the United States, accounted for approximately 93.5 percent of the GHG emissions.

State of California Emissions. The California Air Resources Board (CARB) compiles GHG inventories for the State of California. In 2004, California is estimated to have produced 492 MMT CO_2e . Despite a population increase of 16 percent between 1990 and 2004, California has significantly slowed the rate of growth of GHG emissions due to the implementation of energy efficiency programs as well as

adoption of strict emission controls. Based on the 2018 GHG inventory, which includes data for the years 2000–2016, California emitted 429.4 MMT CO₂e (including emissions resulting from imported electrical power) in 2016 (i.e., the latest year for which data are available). Although California’s rate of growth of GHG emissions is slowing, the State is still a substantial contributor to the total United States emissions inventory.

4.8.2.4 Existing Project Site Greenhouse Gas Emissions

The Project site is currently developed with a nursery. The estimated GHG emissions generated by the existing nursery are summarized in Table 4.8.A. As shown in Table 4.8.A, the existing operational emissions from the nursery on the Project site are approximately 599 metric tons of CO₂e (MT CO₂e) per year.

Table 4.8.A: Existing Project Site Greenhouse Gas Emissions

Existing Operational Activities	Total Greenhouse Gas Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Nursery (all sources)	593.12	0.22	0.00	599.10

Source: *Nakase Property Greenhouse Gas Analysis* (Urban Crossroads 2019b).

CH₄ = methane

MT/yr = metric tons per year

CO₂ = carbon dioxide

N₂O = nitrous oxide

CO₂e = carbon dioxide equivalent

4.8.3 Regulatory Setting

4.8.3.1 Federal Regulations

Prior to the last decade, there have been no concrete federal regulations of GHGs or major planning for climate change adaptation. The following are federal actions regarding GHGs and fuel efficiency over the last decade.

GHG Endangerment. In *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497, which was decided on April 2, 2007, the United States Supreme Court found that four GHGs, including CO₂, are air pollutants subject to regulation under Section 202(a)(1) of the federal Clean Air Act (CAA). The Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (i.e., CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section titled “Clean Vehicles” below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling that upheld the EPA Administrator’s findings.

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the U.S.

On April 1, 2010, the EPA and the United States Department of Transportation (USDOT) National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016. This phase required these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile, which is equivalent to 35.5 miles per gallon (mpg). The second phase applied to passenger cars, light-duty trucks, and medium duty passenger vehicles for model years 2017 through 2025. This phase required these vehicles to meet an estimated combined average emissions level of 163 grams of CO₂ per mile, which is equivalent to 54.5 mpg.

On September 15, 2011, the EPA and the USDOT issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses, model years 2014 to 2018. For combination tractors, the agencies proposed engine and vehicle standards that would achieve up to a 20 percent reduction in CO₂ emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies proposed separate gasoline and diesel truck standards, which would achieve up to a 10 percent reduction for gasoline vehicles and a 15 percent reduction for diesel vehicles (12 and 17 percent, respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption and CO₂ emissions.

Mandatory Reporting of GHGs. The Consolidated Appropriations Act of 2008, passed by Congress in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of GHGs Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 MT or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010, that established thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule modified the requirements of the CAA permitting programs to limit which facilities are required to obtain Prevention of Significant Deterioration and Title V permits.

Standards of Performance for GHG Emissions for New Stationary Sources: Electric Utility

Generating Units. On March 27, 2012, as required by a settlement agreement, the EPA proposed new performance standards for emissions of CO₂ for new, affected, fossil fuel-fired electric utility generating units. New sources greater than 25 megawatts (MW) would be required to meet an output-based standard of 1,000 pounds of CO₂ per megawatt hour (MWH), based on the performance of widely used natural gas combined cycle technology. On February 9, 2016, the United States Supreme Court issued a stay of this regulation pending litigation. Additionally, the current EPA Administrator has signed a measure to repeal the Clean Power Plan, including the CO₂ standards.

Cap and Trade. Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There currently is no federal GHG cap-and-trade program; however, some states have joined to create initiatives to provide a mechanism for cap and trade. The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners were originally California, British Columbia, Manitoba, Ontario, and Quebec. However, Manitoba and Ontario are not currently participating. California linked with Quebec's cap and trade system January 1, 2014, and joint offset auctions took place in 2015.

SmartWay Program. The SmartWay Program is a public-private initiative among the EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both GHG emissions and air pollution) of the goods movement supply chains. SmartWay effectively refers to requirements geared towards reducing fuel consumption. Most large trucking fleets driving newer vehicles are compliant with SmartWay design requirements. Moreover, over time, all heavy-duty trucks will have to comply with the CARB GHG regulation that is designed with the SmartWay Program in mind to reduce GHG emissions by making them more fuel-efficient.

4.8.3.2 State Regulations

Assembly Bill 32. In September 2006, the California State Legislature enacted AB 32, which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "GHGs" as defined under AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, and SF. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride (NF₃), has also been added to the list of GHGs. CARB is the State agency charged with monitoring and regulating sources of GHGs. CARB approved the 1990 GHG emissions level of 427 MMT CO₂e on December 6, 2007. Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMT CO₂e. Emissions in 2020 in a "business as usual" (BAU) scenario were estimated to be 596 MMT CO₂e, which do not account for reductions from AB 32 regulations. At that level, a 28.4 percent reduction was required to achieve

the 427 MMT CO₂e 1990 inventory. In October 2010, CARB prepared an updated 2020 forecast to account for the recession and slower forecasted growth. The forecasted inventory without the benefits of adopted regulation is now estimated at 545 MMT CO₂e. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels.

CARB Scoping Plan. The CARB 2008 Scoping Plan contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector having a different emission reduction target. Most of the measures target the transportation and electricity sectors.

In November 2017, CARB released the final 2017 Scoping Plan Update, which identifies the State's post-2020 reduction strategy. The 2017 Scoping Plan Update reflects the 2030 target of a 40 percent reduction below 1990 levels, set by Executive Order (EO) B-30-15 and codified by SB 32. Key programs that the Scoping Plan Update builds upon include the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and much cleaner cars, trucks, and freight movement utilizing cleaner, renewable energy and strategies to reduce CH₄ emissions from agricultural and other wastes. The 2017 Scoping Plan establishes a new emissions limit of 260 MMT CO₂e for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.

Senate Bill 32 and Assembly Bill 197. On September 8, 2016, Governor Jerry Brown signed SB 32 and its companion bill, AB 197. SB 32 requires the State to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030, a reduction target that was first introduced in EO B-30-15. The new legislation builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving EO S-3-05, which sets a statewide GHG reduction target of 80 percent below 1990 levels by 2050. AB 197 created a legislative committee to oversee regulators to ensure that CARB not only responds to the Governor, but to the Legislature as well.

Cap-and-Trade Program. The Scoping Plan identifies a cap-and-trade program as one of the key strategies for California to reduce GHG emissions. According to CARB, a cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by the year 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. Under cap and trade, an overall limit on GHG emissions from capped sectors is established, and facilities subject to the cap will be able to trade permits to emit GHGs within the overall limit.

Senate Bill 375 – Sustainable Communities and Climate Protection Act of 2008. Passing the Senate on August 30, 2008, SB 375 was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires Metropolitan Planning Organizations (MPOs) to include sustainable community strategies in their Regional Transportation Plans (RTPs) for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for implementation of the strategies.

Assembly Bill 1493 – Pavley Regulations and Fuel Efficiency Standards. AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA’s denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the United States District Court for the District of Columbia in 2011.

Senate Bill 350 – Clean Energy and Pollution Reduction Act of 2015. In October 2015, the legislature approved and the Governor signed SB 350, which reaffirms California’s commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the renewables portfolio standard, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle (EV) charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the bill because of opposition and concern that it would prevent the bill’s passage.

Executive Order S-3-05. Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through EO S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an Executive Order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07 – Low Carbon Fuel Standard. Governor Arnold Schwarzenegger signed EO S-01-07 on January 18, 2007. The order mandated that a statewide goal be established to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020. In particular, the EO S-01-07 established a Low Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan (SIP) for alternative fuels (State Alternative Fuels Plan adopted by the California Energy Commission on December 24, 2007) and was submitted to CARB for consideration as an “early action” item under AB 32. The CARB adopted the Low Carbon Fuel Standard on April 23, 2009. After revisions in response to litigation, the Final Rulemaking Package adopting the regulation was filed with the Office of Administrative Law (OAL) on October 2, 2015.

Executive Order S-13-08. EO S-13-08 states that “climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California’s economy, to the health and welfare of its population and to its natural resources.” Pursuant to the requirements in EO S-13-08, the 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency was

adopted, which is the “. . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States.” Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-30-15. On April 29, 2015, Governor Edmund G. Brown, Jr. issued EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. EO B-30-15 aligns California’s GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris in late 2015. In addition, EO B-30-15 sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MMT CO₂e. EO B-30-15 also requires the State’s climate adaptation plan to be updated every 3 years, and for the State to continue its climate change research program, among other provisions. As with EO S-3-05, EO B-30-15 is not legally enforceable for local governments and the private sector. Legislation that would update AB 32 to make post-2020 targets and requirements a mandate is in process in the State Legislature.

Executive Order B-55-18 and Senate Bill 100. SB 100 and EO B-55-18 were signed by Governor Brown on September 10, 2018. Under the existing renewables portfolio standard, 25 percent of retail sales are required to be from renewable sources by December 31, 2016, 33 percent by December 31, 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030. SB 100 raises California’s renewables portfolio standard requirement to 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. In addition to targets under AB 32 and SB 32, EO B-55-18 establishes a carbon neutrality goal for the state of California by 2045, and sets a goal to maintain net negative emissions thereafter. EO B-55-18 directs the California Natural Resources Agency, the California Environmental Protection Agency (CalEPA), the Department of Food and Agriculture, and the CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

California Code of Regulations, Title 20, Appliance Efficiency Standards. California Code of Regulations (CCR), Title 20, Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations, regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. There are 23 categories of appliances included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

California Code of Regulations, Title 24, Energy Efficiency Standards and California Green Building Standards. CCR, Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The newest 2016 version of Title 24 was adopted by the California Energy Commission (CEC) and became effective on January 1, 2017.

CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen), is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went into effect on January 1, 2011, and is administered by the California Building Standards Commission. CALGreen established mandatory green building standards in California. CALGreen is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017.

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Model Ordinance) was required by AB 1881, the Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SB X7-7) 2020 mandate are expected upon compliance with the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed the California Department of Water Resources (DWR) to update the Model Ordinance through expedited regulation. The California Water Commission approved the revised Model Ordinance on July 15, 2015, effective December 15, 2015. New development projects that include landscape areas of 500 square feet (sf) or more are subject to the Model Ordinance. The revised ordinance requires:

- More efficient irrigation systems,
- Incentives for graywater usage,
- Improvements in on-site stormwater capture,
- Limiting the portion of landscapes that can be planted with high-water-use plants, and
- Reporting requirements for local agencies.

CARB Refrigerant Management Program. The CARB adopted a regulation in 2009 to reduce refrigerant GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal. The regulation is set forth in Sections 95380 to 95398 of CCR Title 17. The rules implementing the regulation establish a limit on statewide GHG emissions from stationary facilities with refrigeration systems with more than 50 pounds of high global warming potential refrigerant. The refrigerant management program is designed to (1) reduce emissions of high global warming potential GHG refrigerants from leaky stationary, non-residential refrigeration equipment; (2) reduce emissions from the installation and servicing of refrigeration and air-conditioning appliances using high global warming potential refrigerants; and (3) verify GHG emission reductions.

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 (ft) 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.

Phase 1 and 2 Heavy-Duty Vehicle GHG Standards. CARB has adopted a new regulation for GHG emissions from heavy-duty trucks and engines sold in California. It establishes GHG emission limits on truck and engine manufacturers and aligns with the national EPA rule for new trucks and engines. Existing heavy-duty vehicle regulations in California include engine criteria emission standards, tractor-trailer GHG requirements to implement SmartWay strategies (i.e., the Heavy-Duty Tractor-Trailer Greenhouse Gas Regulation), and in-use fleet retrofit requirements such as the Truck and Bus Regulation.

Senate Bill 97 and the CEQA Guidelines Update. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code (PRC). The code states “(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a).” The Office of Planning and Research’s recommended amendments to the *State CEQA Guidelines* for addressing GHG emissions became effective on March 18, 2010.

The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The *State CEQA Guidelines* amendments fit within the existing CEQA framework by amending existing *State CEQA Guidelines* to reference climate change. A new section, *State CEQA Guidelines* Section 15064.4, was added to assist agencies in determining the significance of GHG emissions. The new section allows agencies the discretion to determine whether a quantitative or qualitative analysis is best for a particular project. However, little guidance is offered on the crucial next step in this assessment process—how to determine whether the project’s estimated GHG emissions are significant or cumulatively considerable. Also amended were *State CEQA Guidelines* Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively. GHG mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 15130) simply directs agencies to analyze GHG emissions in an EIR when a project’s incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable. Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of GHG reduction plans. Compliance with such plans can support a determination that a project’s cumulative effect is not cumulatively considerable, according to Section 15183.5(b).

4.8.3.3 Regional Regulations

South Coast Air Quality Management District (SCAQMD). SCAQMD is the agency responsible for air quality planning and regulation in the South Coast Air Basin (Basin). The SCAQMD addresses the impacts to climate change from projects subject to SCAQMD permits as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

SCAQMD Interim Thresholds. In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the SCAQMD draft guidance document titled *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* (December 5, 2008) that could be applied by lead agencies. The Working Group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the guidance document provides substantial evidence supporting the approach to determine significance of GHG emissions that can be considered by the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project is less than significant:
 - **Residential and Commercial Land Use:** 3,000 MT CO₂e per year
 - **Based on Land Use Type:** Residential, 3,500 MT CO₂e per year; Commercial, 1,400 MT CO₂e per year; or Mixed-Use, 3,000 MT CO₂e per year
- Tier 4 has the following options:
 - **Option 1:** Reduce BAU emissions by a certain percentage (which is currently undefined)
 - **Option 2:** Early implementation of applicable AB 32 Scoping Plan measures

- **Option 3, 2020 Target for Service Populations¹ (SP):** 4.8 MT CO₂e/SP/year for projects and 6.6 MT CO₂e/SP/year for plans;
 - **Option 3, 2035 Target:** 3.0 MT CO₂e/SP/year for projects and 4.1 MT CO₂e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

4.8.3.4 Local Regulations

The City of Lake Forest does not have any plans, policies, regulations, significance thresholds, or laws addressing climate change at this time. However, the City of Lake Forest *Local Guidelines for Implementing the California Environmental Quality Act (2017)* contains guidelines for estimating GHG emissions and determining significance for CEQA compliance.

The Recreation and Resources Element of the City of Lake Forest General Plan (2015a) includes goals and policies addressing energy conservation. The General Plan states that energy requirements can be diminished through innovative architectural design, building construction, structural orientation, and landscaping.

The City has established ECONomic, which is a voluntary green home education program. The City, through ECONomic, encourages homeowners and building professionals to incorporate green building design into construction projects. The City also promotes utility company incentive programs to retrofit existing development with energy efficient lighting, air conditioning, and heating systems to reduce energy consumption.

4.8.4 Methodology

Evaluation of impacts related to GHG emissions from the proposed Project included the following:

- Determination of the short-term construction and long-term operational GHG emissions
- Determination of regulatory compliance measures required to reduce GHG emissions
- Comparison of Project-related construction and operational GHG emissions with applicable SCAQMD thresholds (summarized in Section 4.8.5, Thresholds of Significance).

The latest version of the California Emissions Estimator Model™ (CalEEMod™) v2016.3.2, released by the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts on October 17, 2017, was used to determine the GHG emissions from the proposed Project.

GHG emissions from the proposed Project were calculated as the sum of the construction emissions amortized over the life of the project plus the operational GHG emissions. To amortize the construction GHG emission over the life of the Project, SCAQMD recommends calculating the total GHG emissions for the construction activities, dividing it by a 30-year project life, then adding it to the annual GHG emissions during operation. As such, construction GHG emissions were amortized

¹ Service Population is defined as the total residents and employees associated with a project.

over a 30-year period then added to the annual operational GHG emissions to determine the Project-related GHG emissions.

Operational GHG emissions were calculated from the following sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions
- Solid Waste
- Water Supply, Treatment, and Distribution
- On-Site Equipment Emissions

Promulgated regulations that would affect the Project's emissions were accounted for in calculations of the Project's GHG emissions. In particular, the Pavley Standards, Low Carbon Fuel Standards, and Renewable Portfolio Standards will be in effect for the AB 32 target year of 2020, and therefore are accounted for in the Project's emission calculations. Additionally, the calculation of the Project's GHG emissions takes into consideration Regulatory Compliance Measures (RCMs), which are detailed in Section 4.8.8, Regulatory Compliance Measures and Mitigation Measures, and project features incorporated into the project design that reduce GHG emissions by reducing energy, gas, and water use and vehicle emissions. Please refer to the *Nakase Property Greenhouse Gas Analysis* (Urban Crossroads 2019b) for additional details on the GHG modeling methodology and assumptions used to estimate the GHG emissions of the proposed Project.

4.8.5 Thresholds of Significance

4.8.5.1 CEQA Thresholds of Significance

Thresholds for GHG emissions impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *CEQA Significance Thresholds Guide* (2009). The proposed Project may be deemed to have a significant impact with respect to GHG emissions if it would:

Threshold 4.8.1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

Threshold 4.8.2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

None of the thresholds for GHG emissions were scoped out in the Initial Study, which is included in Appendix A. Therefore, all of the thresholds listed above are addressed in the following analysis.

Although the SCAQMD's draft significance criteria discussed above in Section 4.8.3.3, Regional Regulations, have not been adopted, the City has determined that the SCAQMD's project-level efficiency threshold methodology can be used to set an appropriate significance criterion by which to determine whether the project emits a significant amount of GHGs. The Tier 4, Option 3 threshold of 4.8 MT CO₂e/SP/year for the year 2020 is applicable to the proposed Project. However, because the build-out year of the proposed Project is 2025, the Project's GHG threshold for 2025 was

calculated using the same methodology that SCAQMD used to determine the 2020 and 2030 threshold, as described below.

The SCAQMD derived the project-level efficiency target of 4.8 MT CO₂e/SP/year based on the 2020 GHG reduction target for land use of 295,530,000 MT CO₂e/year in the CARB 2008 Scoping Plan divided by the 2020 statewide population and employment estimates of 61,200,412 persons. A GHG threshold for 2030 was calculated using the GHG reduction target in the CARB 2017 Scoping Plan of 40 percent below 2020 levels by 2030, which equates to 2.88 MT CO₂e/SP/year. The GHG threshold for the 2025 build-out year for the proposed Project was calculated by linear interpolation between the 2020 target of 4.8 MT CO₂e/SP/year and the 2030 target of 2.88 MT CO₂e/SP/year, which yields a 2025 target of 3.84 MT CO₂e/SP/year. Based on this methodology, GHG thresholds for the proposed Project are as follows:

- 3.84 MT CO₂e/SP/year for 2025
- 2.88 MT CO₂e/SP/year for 2030

4.8.6 Project Impacts

Threshold 4.8.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Significant Impact. Construction activities associated with the proposed Project would result in emissions of CO₂ and CH₄ from construction activities. Operational activities associated with the proposed Project would result in emissions of CO₂, CH₄, and N₂O from the following sources: Area Source Emissions, Energy Source Emissions, Mobile Source Emissions, Solid Waste, Water Supply, Treatment and Distribution, and On-Site Equipment Emissions. These emissions would contribute to the total GHGs emitted from the Project site.

The proposed Project would be required to comply with several regulations aimed at reducing GHG emissions. As specified in RCM AQ-3 (see Section 4.8.8), the proposed Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development. As specified in RCM AQ-4 (see Section 4.8.8), the Project building components (e.g., windows, roof systems, electrical and lighting systems, and heating, ventilation, and air conditioning systems [HVAC]) would be designed in compliance with 2019 CCR Title 24 standards. CCR Title 24 requires projects to implement energy efficiency measures that promote conservation. The 2019 CCR Title 24 standards anticipate 30 percent less energy use for non-residential buildings and 53 percent less energy use for residential use due to lighting upgrades compared to the 2016 standards. As specified in RCM GHG-1 (see Section 4.8.8), appliances installed in the Project buildings would comply with the energy efficiency requirements in CCR Title 20.

In addition to compliance with existing regulations, the Project would include several features aimed at reducing GHG emissions. These features are discussed in Chapter 3.0, Project Description, of this EIR and include:

- Senior housing dwelling units (these tend to have lower levels of auto ownership which in turn decrease vehicle emissions)

- Pedestrian connections between the Nakase Planned Community neighborhoods
- Implementation of a Water Conservation Strategy
- Electric vehicle charging stations and carpool parking spaces for employees at the future school site, and employees and residents at the senior housing site.
- Installation of insulation in walls and attic spaces
- Installation of high-efficiency windows and doors
- Installation of HVAC systems with a high Seasonal Energy Efficiency Ratio (SEER)
- Installation of water-efficient plumbing fixtures
- Installation of tankless water heater systems
- Installation of light-emitting diode (LED) technology within homes
- Use of recycled water for common area landscape irrigation
- Use of drought-tolerant plants in landscape design
- Installation of water-efficient irrigation systems with smart sensor controls
- Stormwater Best Management Practices (BMPs)
- Installation of a 240-volt circuit in each home to allow easy installation of EV charging

GHG emissions for the proposed Project in 2025 and 2030 with compliance with regulatory requirements (RCM AQ-3, RCM AQ-4, and RCM GHG-1) and Project Design Features (PDFs) are summarized in Tables 4.8.B and 4.8.C. As shown in these tables, the proposed Project would result in 4.91 MT CO₂e/SP/year in 2025 and 4.42 MT CO₂e/SP/year in 2025 after implementation of regulatory requirements and PDFs. The total GHG emissions of the proposed Project would exceed the thresholds of 3.84 MT CO₂e/SP/year for 2025 and 2.88 MT CO₂e/SP/year for 2030. Thus, project-related emissions would have a potentially significant impact related to generation of GHG emissions.

No feasible mitigation measures exist that would substantially lessen GHG emissions to levels that are less than significant. More than 73 percent of all mobile-source emissions in 2025 and 66 percent of all mobile-source emissions in 2030 (by weight) would be generated by the proposed Project's mobile sources (traffic). Neither the Project Applicant nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and PDFs included as part of the proposed Project. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the proposed Projects mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to generation of GHG emissions would remain significant and unavoidable.

Threshold 4.8.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Significant Impact. The Project's consistency with AB 32 and SB 32 are discussed below.

Table 4.8.B: 2025 Project Greenhouse Gas Emissions

Emissions Source		Emissions (MT/yr)			
		CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Annual construction-related emissions amortized over 30 years		372.21	0.04	0.00	373.19
Area	Other Uses	0.03	7.00E ⁻⁰⁵	0.00	0.03
	Residential	199.42	0.02	3.42E ⁻⁰³	200.84
Energy	Other Uses	128.25	0.01	1.96E ⁻⁰³	129.01
	Residential	1,712.09	0.09	0.03	1,722.16
Mobile	Other Uses	2,042.38	0.08	0.00	2,044.38
	Residential	6,906.23	0.27	0.00	6,912.99
Waste	Other Uses	37.16	2.20	0.00	92.07
	Residential	170.14	10.06	0.00	421.52
Water Usage	Other Uses	29.98	0.07	1.90E ⁻⁰³	32.18
	Residential	170.81	1.33	0.03	213.96
Total CO₂e (All Sources)		12,142.31			
<i>Existing Emissions</i>		<i>-599.10</i>			
Net CO₂e (Project Minus Existing)		11,543			
Project Service Population		2,349			
Total CO₂e/Service Population		4.91			
2025 GHG Service Population Threshold		3.84			
Threshold Exceeded?		YES			

Source: Nakase Property Greenhouse Gas Analysis (Urban Crossroads 2019b).

CH₄ = methane CO₂e = carbon dioxide equivalent MT/yr = metric tons per year
CO₂ = carbon dioxide GHG = greenhouse gas N₂O = nitrous oxide

Table 4.8.C: 2030 Project Greenhouse Gas Emissions

Emissions Source		Emissions (MT/yr)			
		CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Annual construction-related emissions amortized over 30 years		372.21	0.04	0.00	373.19
Area	Other Uses	0.03	7.00E ⁻⁰⁵	0.00	0.03
	Residential	199.42	0.02	3.42E ⁻⁰³	200.84
Energy	Other Uses	115.19	0.01	1.96E ⁻⁰³	115.94
	Residential	1,549.03	0.09	0.03	1,559.10
Mobile	Other Uses	1,822.25	0.07	0.00	1,823.97
	Residential	6,161.18	0.23	0.00	6,167.00
Waste	Other Uses	37.16	2.20	0.00	92.07
	Residential	170.14	10.06	0.00	421.52
Water Usage	Other Uses	25.71	0.07	1.90E ⁻⁰³	27.91
	Residential	147.85	1.33	0.03	191.00
Total CO₂e (All Sources)		10,972.55			
<i>Existing Emissions</i>		<i>-599.10</i>			
Net CO₂e (Project Minus Existing)		10,373			
Project Service Population		2,349			
Total CO₂e/Service Population		4.42			
2030 GHG Service Population Threshold		2.88			
Threshold Exceeded?		YES			

Source: Nakase Property Greenhouse Gas Analysis (Urban Crossroads 2019b).

CH₄ = methane CO₂e = carbon dioxide equivalent MT/yr = metric tons per year
CO₂ = carbon dioxide GHG = greenhouse gas N₂O = nitrous oxide

Assembly Bill 32. The 2008 CARB Scoping Plan identifies strategies to reduce California’s GHG emissions in support of AB 32, which requires the State to reduce its GHG emissions to 1990 levels by 2020. Measures that are applicable and supported by the Project (e.g., energy efficiency) are summarized in Table 4.8.D. Many of the strategies identified in the CARB Scoping Plan are not applicable at the project level (e.g., long-term technological improvements to reduce emissions from vehicles) and are therefore not listed in Table 4.8.D. While some of the measures are not directly applicable, the Project would not conflict with their implementation (refer to Table 3-5 of the *Nakase Property Greenhouse Gas Analysis* [Urban Crossroads 2019b] for additional discussion of the measures that are not applicable to the Project). The Project would not conflict with any of the provisions of the CARB Scoping Plan and in fact would support six of the action categories contained in the Scoping Plan through energy efficiency, water conservation, recycling, and landscaping, as detailed in Table 4.8.D.

Table 4.8.D: Scoping Plan Consistency Summary

Action Category	Supporting Measures	Consistency
Energy Efficiency	<p>E-1: Building, Appliance, and Utility Energy Efficiency Standards and Programs (Electricity)</p> <p>E-2: Combined Heat and Power (CHP) Systems</p> <p>CR-1: Building, Appliance, and Utility Energy Efficiency Standards and Programs (Natural Gas)</p> <p>CR-2: Solar Water Heating (CSI Thermal Program)</p>	Consistent. The project will include a variety of building, water, and solid waste efficiencies consistent with 2016 CALGreen requirements.
Million Solar Roofs (MSR) Program	E-4: Senate Bill 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and earlier solar programs.	Consistent. The MSR program sets a goal for use of solar systems throughout the State as a whole. The Project’s roof structures will be designed to support solar panels.
Green Building Strategy	GB-1: Green Building Standards	Consistent. The project will include a variety of building, water, and solid waste efficiencies consistent with 2016 CALGreen requirements.
Recycling and Waste	<p>RW-1: Landfill Methane Control</p> <p>RW-2: Increasing the Efficiency of Landfill Methane Capture</p> <p>RW-3: Mandatory Commercial Recycling</p>	Consistent. The project will be required to recycle a minimum of 50 percent of waste from construction and operational activities per the California Integrated Waste Management Act of 1989 (AB 939).
Sustainable Forests	F-1: Sustainable Forest Target	Consistent. The project will increase carbon sequestration by increasing on-site trees per the project landscaping plan.
Water	<p>W-1: Water Use Efficiency</p> <p>W-2: Water Recycling</p> <p>W-3: Water System Energy Efficiency</p> <p>W-4: Reuse Urban Runoff</p> <p>W-5: Renewable Energy Production</p> <p>W-6: Water Public Goods Charge</p>	Consistent. The project will include use of low-flow fixtures and efficient landscaping per State requirements.

Source: *Nakase Property Greenhouse Gas Analysis* (Urban Crossroads 2019b).

CALGreen = California Green Building Standards Code

City = City of Lake Forest

Senate Bill 32. At the State level, EO S-3-05 and EO B-30-15 are orders from the State’s Executive Branch for the purpose of reducing GHG emissions. The goal of EO S-3-05 is to reduce GHG emissions to 1990 levels by 2020 and was codified by the Legislature as the 2006 Global Warming Solutions Act (AB 32). As discussed above, the proposed Project is consistent with AB 32. Therefore, the proposed Project does not conflict with this component of EO S-3-05. The Executive Orders also establish goals to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. However, studies have shown that, in order to meet the 2030 and 2050 targets, aggressive technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, would be required. In its Climate Change Scoping Plan, CARB acknowledged that the “measures needed to meet the 2050 target are too far in the future to define in detail.” In the First Scoping Plan Update, however, CARB generally described the type of activities required to achieve the 2050 target: “energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately.”

Unlike the 2020 and 2030 reduction targets of AB 32 and SB 32, respectively, the 2050 target of EO S-3-05 has not been codified. Accordingly, the 2050 reduction target has not been the subject of any analysis by the CARB. For example, the CARB has not prepared an update to the aforementioned Scoping Plan that provides guidance to local agencies as to how they may contribute to the achievement of the 2050 reduction target.

In 2017, the California Supreme Court examined the need to use the EO S-3-05 2050 reduction target in *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497 (Cleveland National). The case arose from the San Diego Association of Governments (SANDAG) adoption of its 2050 RTP, which included its Sustainable Communities Strategy (SCS), as required by SB 375 (discussed above). On review, the Supreme Court held that SANDAG did not violate CEQA by not considering the EO S-3-05 2050 reduction target.

Further, the proposed Project is much smaller in size and scope in comparison to the RTP examined in Cleveland National. Accordingly, there is no information presently available to assess the proposed Project’s consistency with regard to the 2050 target of EO S-3-05.

The 2017 CARB Scoping Plan builds on the 2008 Scoping Plan to achieve the 40 percent reduction from 1990 levels by 2030. The proposed Project would be consistent with the following major elements of the 2017 Scoping Plan framework for achieving the GHG reductions:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing the number of zero emission vehicle (ZEV) buses and trucks. When adopted, this measure would apply to all buses accessing the Project site.

- Low Carbon Fuel Standard, with an increased stringency (18 percent by 2030). When adopted, this measure would apply to all fuel purchased in the State and used by residents of the proposed Project.
- Implementing SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030. When adopted, this measure would apply when electricity is provided to the proposed Project by a utility company.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing CH₄ and HFC emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030. When adopted, the proposed Project would be required to comply with this measure and reduce SLPS accordingly if it were to emit any CH₄ or HFC emissions during any on-site activities.
- 20 percent reduction in GHG emissions from refineries by 2030. The proposed Project would be required to comply with this measure if it were to utilize any fuel from refineries.

The remaining major elements of the 2017 CARB Scoping Plan framework are not applicable to the proposed Project; however, the Project would not conflict with implementation of these elements (refer to Section 3.9 of the *Nakase Property Greenhouse Gas Analysis* [Urban Crossroads 2019b] for additional discussion of the Scoping Plan elements that are not applicable to the Project).

As discussed above, the Project would not conflict with any of the 2017 Scoping Plan elements. Notwithstanding, because the Project exceeds the applicable service population GHG thresholds and consequently has the potential to result in a cumulatively considerable impact with respect to GHG emissions, a significant and unavoidable impact would occur related to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As discussed previously, there is no available mitigation to substantially lessen this significant impact. Therefore, impacts related to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions would remain significant and unavoidable.

4.8.7 Level of Significance Prior to Mitigation

Impacts related to the generation of GHG emissions and conflict with an applicable GHG reduction plan, policy, or regulation are considered significant and unavoidable.

4.8.8 Regulatory Compliance Measures and Mitigation Measures

The following RCMs are SCAQMD rules that are applicable to the proposed Project and are considered in the analysis of potential impacts related to GHG emissions. The City considers these requirements to be mandatory; therefore, they are not mitigation measures.

- RCM AQ-3: South Coast Air Quality Management District (SCAQMD) Rule 445.** Prior to the issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design does not include wood-burning stoves and fireplaces in new development in compliance with SCAQMD Rule 445.
- RCM AQ-4: Title 24 of the California Code of Regulations (CCR).** Prior to issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and the California Green Building Standards Code (CALGreen).
- RCM GHG-1: Title 20 of the California Code of Regulations (CCR).** Appliances installed in a project building will comply with the energy efficiency requirements in CCR Title 20, Appliance Energy Efficiency Standards. All appliances shall be Energy Star appliances.

Even with compliance with the regulatory requirements listed above, impacts related to GHG emissions would be significant. However, there are no feasible mitigation measures to further reduce impacts related to GHG emissions.

4.8.9 Level of Significance after Mitigation

There is no feasible mitigation available to substantially lessen the significant impacts related to generation of GHG emissions and conflict with an applicable GHG reduction plan, policy, or regulation. Therefore, impacts related to GHG emissions would remain significant and unavoidable.

4.8.10 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Hence, GHG impacts are by nature a cumulative impact. Consequently, it is speculative to determine how an individual project's GHG emissions would impact California. Therefore, impacts identified under Threshold 4.8.1 are not project-specific impacts to GCC, but are the proposed Project's contribution to this cumulative impact. Because the Project's GHG emissions were considered significant and unavoidable, the Project's GHG emissions and contribution to GCC impacts are considered cumulatively considerable and therefore significant and unavoidable. There is no feasible mitigation available to substantially lessen these cumulatively significant GHG emission impacts.

4.9 HAZARDS AND HAZARDOUS MATERIALS

This section addresses potential hazards and hazardous material impacts at the Project site and in the surrounding area that may result from implementation of the proposed Project. Pertinent information and findings from the following reports are summarized in this section:

- *Phase I Environmental Site Assessment, 20621 Lake Forest Drive, Lake Forest, California 92630* (Hillman Consulting 2018b)
- *Limited Phase II Subsurface Investigation Report, 20621 Lake Forest Drive, Lake Forest, California* (Hillman Consulting 2018a)
- *Updated Geologic and Environmental Hazards Assessment Report, Nakase Elementary School* (Placeworks 2019d).
- *Soil Characterization Assessment* (ENGEO 2016)
- *Nakase Elementary School EMF Study and Exemption Request* (Placeworks 2019a)
- *Nakase Elementary School Health Risk Assessment* (PlaceWorks 2019b)
- *Nakase Elementary School Water Pipeline and Tank Safety Hazard Assessment* (PlaceWorks 2019c)

The complete reports are included in Appendix H.

4.9.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Three comment letters included comments related to hazards and hazardous materials.

The letter from the OC Fire Authority (July 31, 2018) suggested that the significance conclusion related to wildland fire hazards be revised to reflect that a Fuel Modification Conceptual Plan and a Fire Protection Plan with Ember Mitigation have been approved for the proposed Project. The letter from Charles Larson (August 4, 2018) expressed concern regarding the proximity of the potential school site to the gas station across Rancho Parkway.

4.9.2 Existing Environmental Setting

The approximately 122-acre (ac) Project Site is currently operating as an agricultural wholesale plant nursery and has been used for agricultural production (orchards) and/or a nursery since the late 1930s. In 2018, a Phase I Environmental Site Assessment (ESA) (Hillman Consulting 2018b) was conducted for the Project site to determine if any Recognized Environmental Conditions (RECs) were associated with the Project site. A REC is defined by the American Society of Testing Materials (ASTM) as the presence or likely presence of any hazardous substances or petroleum products in,

on, or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The 2018 Phase I ESA included the following:

- A non-invasive visual reconnaissance of the Property and adjoining properties in accordance with ASTM guidelines for evidence of RECs
- Interviews of past and present owners and occupants as well as State and local government officials seeking information related to the potential presence of RECs at the Property
- A review of standard physical record sources for available topographic, geologic, and groundwater data
- A review of standard historic record sources (e.g., fire insurance maps, city directories, aerial photographs, prior reports and interviews) to determine prior uses of the Property from the present back to the Property's first developed use or back to 1940, whichever is earlier
- A review of standard environmental record sources, including federal and State environmental databases (provided by Environmental Data Resources [EDR]), and additional environmental record sources, to identify potential regulator concerns with the Property, adjoining properties, and properties located within the surrounding area

Notable environmental conditions identified in the 2018 Phase I ESA are listed below:

- A National Priority List (NPL) site is located within 1 mile (mi) of the Property. The site is described as Marine Corps Air Station (MCAS) El Toro, which is approximately 4,736 feet (ft) northwest of the Project site and cross-gradient relative to the Project site. In 1985, trichloroethylene (TCE) was found in a portion of the groundwater basin beneath the former MCAS El Toro and Central Irvine. TCE is a volatile organic compound (VOC) that was widely used as a solvent for aircraft cleaning. Prior to the 1970s, the disposal of cleaning solvents was not regulated. As a result of past disposal practices, a 1 x 3 mi plume of groundwater contamination extended west of MCAS El Toro. Based on a review of the EDR report and published groundwater plume maps, the TCE contaminant plume is about 450 ft deep and located over 2 mi from the boundary of the Project site. In addition, the groundwater flow at the plume is toward the west and migrates away from the Project site. MCAS El Toro has been under federal facility remedial investigation since the 1990s. Considering its current status, the Project site's distance from the TCE plume and respective downgradient location (i.e., groundwater at MCAS El Toro flows away from the Project site), this listing is not considered to be a REC in connection with the Project site.
- Seven pole-mounted transformers were observed on the northeast side of the Project site. No signs of leaking or staining were observed in the area of the transformers.

- Two 25-gallon (gal) drums containing grease and two 55 gal drums containing tractor fluid were observed in the maintenance garage. No staining or leaking was noted in the areas of the drums.
- Five aboveground storage tanks (ASTs) containing diesel and gasoline as well as large quantities of pesticides are stored on the adjoining property to the southeast, are not part of the Project site, and were not assessed.
- Rancho Parkway Shell #07, located at 26721 Rancho Parkway is located on the underground storage tank (UST) and EDR Historic Auto databases. This site adjoins the Project site to the north-northeast and is upgradient of the Project site (i.e., groundwater at the gas station flows toward the Project site). The UST listing indicates a UST is registered as being on the Project site. Considering a lack of reported spills or releases, this listing is not considered to be a REC in connection with the Project site.
- The Home Depot at 20021 Lake Forest Drive is located on the RCRA-SQG (federal Resource Conservation and Recovery Act-Small Quantity Generator), FINDS, and ECHO databases. This site adjoins the Project site to the northeast and is upgradient of the Project site. The RCRA-SQG listing indicates the site is registered as a small-quantity generator of hazardous waste with no reported violations. The FINDS listing indicates the site is on the California Hazardous Waste Tracking System – Datamart, RCRA, and State Master databases. The site is in the RCRA program with no reported spills or violations. Due to a lack of reported spills or violations, these listings are not considered to be RECs in connection with the Project site.
- The Project site appears to have been historically utilized as orchards and/or a nursery since circa 1938. There is the potential for soil contamination due to historic application of pesticides; however, based on the *Soil Characterization Assessment* (ENGEO 2016) indicating no impact on the soil from organochlorine pesticides, these are not considered to be a REC in connection with the Project site.

Other information documented in the 2018 Phase I ESA included:

- Fifty-five gallon storage drums were observed around the Project site during a previous Phase I ESA site reconnaissance (2016) that contained various hazardous materials (e.g., herbicides and pesticides), but no leaks were noted. Several ASTs containing fertilizers and petroleum products (i.e., gasoline and diesel) were noted on the Project site. A historical diesel UST was also documented on the Project site.
- The *Soil Characterization Assessment* (ENGEO 2016) documented that soil test results found that lead and arsenic concentrations were within the range of expected background concentrations.
- The *Soil Characterization Assessment* (ENGEO 2016) found that the site soils are suitable for future residential development, but recommended additional testing at the historical UST location.

- Asbestos-containing materials (ACMs), lead-based paint, and polychlorinated biphenyls (PCBs) may be present in structures on the Project site.
- The Project Site is in a low risk area for radon.

Additional testing was conducted at the historical UST location as part of the Limited Phase II ESA (Hillman Consulting 2018a). Four soil gas probes were installed in accessible locations at the UST site. Results from soil gas sampling indicated no detectable levels of VOCs, thereby indicating no significant vapor intrusion threat potential. No additional testing at this location was recommended.

The *Updated Geologic and Environmental Hazards Assessment Report* (Placeworks 2019d) for the Project site focused on hazards pertinent to proposed school sites. This report determined there were no chemical pipelines on the Project site, or pressurized sewer lines, high-pressure natural gas pipelines, or fuel ASTs on or within 1,500 ft of the Project site. In addition, the Project site is not a former hazardous waste disposal site or solid waste disposal site. The nearest oil or gas well to the Project site is 1.38 mi to the southwest. The State of California Division of Oil, Gas, and Geothermal Resources (DOGGR) lists the well status as plugged and abandoned.

As discussed in the *Updated Geologic and Environmental Hazards Assessment Report* (Placeworks 2019d), there currently are SCE 66 kV double-circuit overhead transmission lines that are within a 20 ft wide SCE easement along the south side of Bake Parkway that run parallel to the northwestern boundary of the proposed school site. The southern edge of the SCE easement would be the school's northwestern property line. As part of the Project, these 66 kV lines would be undergrounded prior to construction of the proposed school on the Project site.

4.9.3 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste as well as the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The Governor's Office of Emergency Services (Cal OES) established and updates the Standardized Emergency Management System (SEMS) as needed in accordance with the California Emergency Services Act for emergency response and evacuation. SEMS facilitates response prioritization, interagency cooperation, and the efficient flow of resources and information.

SEMS incorporates the following:

- Incident Command System (field-level emergency response system)
- Interagency coordination for allocation of resources
- Mutual aid (providing emergency resources from non-affected jurisdictions)
- Operational Area Concept (coordinate damage information, resource requests and emergency response within the affected area)

Local agencies involved in emergency response and evacuation include the Orange County Sheriff's Department (OCSD), Orange County Fire Authority (OCFA), and City of Lake Forest Police Department.

4.9.3.1 Federal Regulations

The primary federal laws regulating hazardous materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (42 United States Code [USC] Section 9601 et seq.) and the Resource Conservation and Recovery Act of 1976 (RCRA) 42 USC Section 6901 et seq.). The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle-to-grave" regulation of hazardous waste generated by operating entities. Other federal laws applicable to the project site are listed below.

- The Clean Air Act (CAA) (42 USC Section 7401 et seq.) protects the public from exposure to airborne contaminants known to be hazardous to human health. Under the CAA, the United States Environmental Protection Agency (EPA) established National Emissions Standards for Hazardous Air Pollutants.
- The Clean Water Act – National Pollutant Discharge Elimination System (Section 402[p]) (33 USC Section 1342[p]) regulates discharges and spills of pollutants, including hazardous materials to surface waters and groundwater.
- The Safe Drinking Water Act (42 USC Section 300(f) et seq.) regulates discharges of pollutants to underground aquifers and establishes standards for drinking water quality.
- The Toxic Substances Control Act (15 USC Section 2601 et seq.) regulates manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.
- The Federal Insecticide, Fungicide, and Rodenticide Act (7 USC Section 136 and 40 Code of Federal Regulations [CFR] Parts 152–171) regulates the manufacturing, distribution, sale, and use of pesticides.
- The Hazardous Materials Transportation Act (49 USC Section 5101 et seq. and 49 CFR, Parts 101, 106, 107, and 171–180) regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.
- The Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law 101-615) regulates the safe transport of hazardous material intrastate, interstate, and for foreign commerce.
- The Emergency Planning and Community Right to Know Act (42 USC Section 11001 et seq. and 40 CFR, Parts 350.1 et seq.) regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials.

4.9.3.2 State Regulations

The State of California has established many laws and regulations that expand on federal laws. Laws and regulations applicable to the project site are listed below.

- The California Public Resources Code (PRC) Section 21151.4 requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mi of the project about potential effects on the school if the project might reasonably be anticipated to emit hazardous air emissions or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.
- The Porter-Cologne Water Quality Control Act (California Water Quality Code, Section 13000 et seq.) regulates water quality through the State Water Resources Control Board and the Regional Water Quality Control Boards, including oversight of water monitoring and contamination cleanup and abatement.
- The Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code, Section 25500 et seq.) requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.
- The Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.) regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California.
- The Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code, Section 25249.5 et seq.) regulates the discharge of contaminants to groundwater.
- Cortese List Statute (California Government Code, Section 65962.5) requires the Department of Toxic Substances Control (DTSC) to compile and maintain lists of potentially contaminated sites throughout the state, and includes the Hazardous Waste and Substances Sites List.
- The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (California Environmental Protection Agency [CalEPA] 2012) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other state agencies set the standards for their programs, while local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies (CUPA).
- State of California Division of Oil, Gas, and Geothermal Resources Regulatory Program (DOGGR) supervises the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells throughout the State. The regulatory program set forth by DOGGR for the management of these resources emphasizes the appropriate development of oil, natural gas, and geothermal resources in the State through sound engineering practices that protect the environment, prevent pollution, and ensure public safety.

4.9.3.3 School Sites

PRC Section 21151.8 (School Sites and Hazardous Materials); CEQA Guidelines, Section 15186 (School Facilities). CEQA prohibits lead agencies from approving environmental documents for any project involving the purchase of a school site or the construction of a new school unless the following conditions occur:

- The EIR identifies whether the property to be purchased or to be constructed upon is a current or former hazardous waste site or a site that contains underground or aboveground pipelines carrying hazardous substances. The lead agency notifies in writing and consults with the administrative agency in which the school site is located, and with the local air pollution control district, to identify facilities within 0.25 mi of the school site that may reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste.
- If facilities within a 0.25 mi radius of the school site that may reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste are identified, the school district's governing board must make one of the following findings:
 - The health risks from the identified facilities do not and will not constitute an actual or potential endangerment of public health to persons who attend or are employed at the school; or
 - Corrective measures required under order by another agency having jurisdiction over the facilities will, before the school is occupied, result in the mitigation of all chronic or accidental air emissions to levels that do not constitute an actual or potential endangerment of public health to persons who would attend or be employed at the proposed school. If this finding is made, the board shall make a subsequent finding, prior to occupancy at the school, that the emissions have been so mitigated.

Education Code, Sections 17213.1, 17213.2, and 17268. These statutes require extensive DTSC involvement in the environmental review process for projects that will receive State funding. Prior to acquiring a school site or approving a school construction project, school districts must contract for the preparation of a Phase I ESA.

The Phase I ESA must contain sufficient information to determine whether there is a potential for exposure to hazardous materials and must conclude that either (1) a further investigation of the site is not required, or (2) a Preliminary Endangerment Assessment (PEA) is necessary. If the Phase I ESA concludes, or DTSC determines, that a PEA must be conducted, a school district has two options: it can either proceed to contract with a qualified environmental assessor to conduct a PEA of the property under DTSC oversight, or it can drop the school site from further consideration.

If a school district chooses to proceed with a PEA, it must enter into an Environmental Oversight Agreement with DTSC to oversee preparation of the PEA. DTSC must then assist the district with scoping the work plan for the PEA investigation. Sampling could include soil gas, soil matrix, groundwater, and other sampling and calculation of cancer risks and non-cancer risks. Based on

information developed during the PEA and a conservative human and ecological risk evaluation, the DTSC would then make a decision regarding potential risks posed by the site. Possible outcomes of the DTSC's decision include the following:

- The potential requirement for further investigation through the Remedial Investigation/ Feasibility Study process if the site is found to be significantly impacted by hazardous materials.
- The need to perform a removal action if localized hazardous impacts are found.
- Issuance of a "No Further Action" finding if the site is found not to be significantly impacted and risks to human health and the environment are found to be within acceptable levels based on the conservative screening level human health risk assessment. Any human health risk assessment must be quantitative for both residential and school-based receptors. The effort entails data aggregation, selection of chemicals of potential concern, exposure assessment, toxicity assessment, and risk characterization.

A school district can choose to enter into a Voluntary Cleanup Agreement (VCA) with DTSC if the district elects to perform the removal action to prepare the site for use as a school site. Before a site's school buildings can be occupied, DTSC must certify that all necessary response actions have been completed to ensure that hazardous materials at the school site no longer pose a significant risk to children and adults, except for the operation and maintenance activities.

Education Code, Section 17215. Before acquiring title to property for a new school site, the governing board of the school district is required to give the California Department of Education (CDE) written notice of the proposed acquisition if the proposed site is within 2 mi of an airport runway or a potential runway is included in an airport master plan that is nearest to the site. CDE must then notify the California Department of Transportation (Caltrans), which in turn would investigate the proposed site and submit a written report of its findings, including recommendations concerning acquisition of the site. As part of the investigation, the owner and operator of the airport would be granted the opportunity to comment upon the proposed school site. If the written report does not favor the acquisition of the property for a school site, State funds or local funds cannot be used for acquisition of, or school construction at, the subject site.

Education Code, Section 17251; CDE Regulations, 5 California Code of Regulations (CCR) Section 14010 (Standards for School Site Selection). Section 17251 requires CDE to establish standards for use by school districts in assessing school sites. The CDE regulations adopted pursuant to Section 17251 contain the following standards for school sites, among others:

- For power lines and transmission lines, the property line of a proposed school site shall be at least: (1) 100 ft from the edge of an easement for a 50- to 133-kilovolt (kV) line; (2) 150 ft from the edge of an easement for a 220 to 230 kV line; and (3) 350 ft from the edge of an easement for a 500 to 550 kV line (5 CCR Section 4010[c]).
- For railroads, the proposed site shall be a sufficient distance from a railroad track easement. If the proposed school site is within 1,500 ft of a railroad track easement, a safety study shall be

completed by a competent professional. An analysis of the following safety factors shall be completed: (1) distance from the track easement to the site; (2) identification of whether tracks are mainline or spur; (3) type of cargo to be transported; (4) projected train speed; (5) frequency/schedule of rail traffic compared to school schedules; (6) distance of grade, curve, bridge, signal, or other track features to the proposed school; (7) requirements for sound and safety barriers; (8) pedestrian/vehicle safety near track crossing; and (9) proximity of rail easement to high-pressure gas lines (5 CCR Section 14010[d]).

- The site shall not be adjacent to a road or freeway that any site-related traffic studies have determined will have safety problems (5 CCR Section 14010[e]).
- The site shall not be located near an aboveground water or fuel storage tank or within 1,500 ft of the easement of an aboveground or underground pipeline that can pose a safety hazard as determined by a risk analysis study, conducted by a competent professional, which may include certification from a local public utility commission (5 CCR Section 14010[h]).
- Existing or proposed zoning of the surrounding properties shall be compatible with schools in that it would not pose a potential health or safety risk to students or staff in accordance with Education Code Section 17213 and Government Code Section 65402 and available studies of traffic surrounding the site (5 CCR Section 14010[m]).
- If the proposed site is on or within 2,000 ft of a significant disposal of hazardous waste, the school district shall contact the DTSC for a determination of whether the property should be considered a Hazardous Waste Property or a Border Zone Property (5 CCR Section 14010[t]).
- The site shall be conveniently located for public services, including fire protection and police protection whenever feasible (5 CCR Section 14010[p]).
- CDE School Facilities Planning Division, School Site Selection and Approval Guide) outlines the requirements of the CDE regulations for site selection that are described above and includes recommendations designed to ensure a safe school environment and facilitate State approval of sites.¹ The guide helps school districts determine compliance with the requirements of CDE Regulations Section 14010 et seq. and Education Code Section 17213 et seq.

4.9.3.4 Regional Regulations

The Orange County Health Care Agency (HCA) is the CUPA for the County of Orange and the City of Lake Forest, and has jurisdiction over the following six programs:

- Hazardous Materials Disclosure
- Business Emergency Plan
- Hazardous Waste
- Underground Storage Tank

¹ School Site Selection, and Approval Guide. <https://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp> (accessed May 21, 2019)

- Aboveground Petroleum Storage Tank
- California Accidental Release Prevention

OCFA is the administering agency for the chemical inventory and business emergency plan regulations for the City. OCFA's disclosure activities are coordinated with the HCA. OCFA's Hazardous Materials Services Section (HMSS) is staffed with technical and administrative personnel who are assigned implementation and management of the disclosure program.

Orange County Hazardous Materials Area Plan (Hazardous Materials Area Plan). The Hazardous Materials Area Plan was prepared by the OCFA to assist agencies and businesses in Orange County in their pre-emergency planning and emergency response role. The Hazardous Materials Area Plan also serves to provide the public with information about facilities that may pose a threat or potential hazard to the community health and safety. Furthermore, this plan is designed to assist in the prevention or mitigation of the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials into the workplace or environment. The jurisdictions covered by the Hazardous Materials Area Plan include the unincorporated areas of the Orange County, those cities contracted with the OCFA, and the City of Laguna Beach. Lake Forest is currently contracted to and served by the OCFA.

An objective of the Hazardous Materials Area Plan is to prescribe procedures for the effective and economical allocation of resources in time of hazardous materials emergency. This is done by establishing an emergency organization, assigning tasks, specifying policy and general procedures, and providing coordination of planning for all phases of emergency planning for a hazardous materials incident or emergency.

4.9.3.5 Local Regulations

City of Lake Forest Municipal Code. Chapter 6.16 of the City of Lake Forest Municipal Code addresses hazardous materials.¹The intent of this chapter is to:

- Enable emergency service personnel in the City to know of the use and dangers of hazardous materials in the community in order to plan for and respond to potential emergencies and exposure to such materials;
- Provide basic information on the location, type, and health risks of hazardous materials used or stored in the City to firefighters, health officials, planners, elected officials, and other emergency response personnel; and
- Implement the community's right and need for basic information on the use and disposal of hazardous materials in the City and provide for an orderly system for the provision of such information.

City of Lake Forest Emergency Preparedness Plan. The City of Lake Forest Emergency Preparedness Plan was developed to: (a) help City staff determine the actions needed to prevent disasters where

¹ City of Lake Forest Municipal Code. Website: <http://qcode.us/codes/lakeforest/> (accessed May 21, 2019).

possible; (b) reduce the vulnerability of residents to any disasters that cannot be prevented; (c) establish capabilities for protecting citizens from the effects of disasters; (d) respond effectively to the actual occurrence of disasters; and (e) provide for recovery in the aftermath of any emergency involving extensive damage or other debilitating influence on the normal pattern of life within the community.

Emergency response to accidents in Lake Forest that are associated with hazards and hazardous waste material is typically undertaken by the OCFA. In addition, the fire service in Orange County supports an effective system of mutual aid and automatic aid between neighboring jurisdictions for the sharing of common resources. However, depending on the situation and location of a hazardous waste incident, agencies other than the City and County Fire Departments would also help provide emergency response. The planning basis for response to a hazardous material incident in Lake Forest is the Orange County Hazardous Materials Area Plan, as described above.

The OCFA actively enforces codes and ordinances to ensure that a reasonable degree of fire safety exists in facilities and occupancies to minimize the threat to life and property. This activity is ongoing and conducted daily. Comprehensive pre-emergency planning, fire protection engineering, and training programs are currently in place and are designed to ensure the Department's ability to meet future service demands.

4.9.4 Methodology

The analysis in this section indicates whether potential hazards or hazardous materials impacts are present due to past or present use of the Project site and/or properties in the immediate vicinity of the Project site. This section analyzes the potential impacts of the proposed Project as compared to existing conditions based on the setting described in the technical reports listed in the first paragraph of this section.

4.9.5 Thresholds of Significance

The thresholds for hazards and hazardous materials impacts used in this analysis are consistent with Appendix G of the State CEQA Guidelines and the City's *CEQA Significance Thresholds Guide* (March 2009). The proposed Project may be deemed to have a significant impact with respect to hazards and hazardous materials if it would:

- Threshold 4.9.1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**
- Threshold 4.9.2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.**
- Threshold 4.9.3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

- Threshold 4.9.4:** Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, it would create a significant hazard to the public or the environment.
- Threshold 4.9.5:** 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, result in a safety hazard or excessive noise for people residing or working in the project area.
- Threshold 4.9.6:** Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Threshold 4.9.7:** Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

The Initial Study, included as Appendix A, substantiates that there would be no impacts associated with Thresholds 4.9.5 and 4.9.7; therefore, these thresholds will not be addressed in the following analysis.

4.9.6 Project Impacts

- Threshold 4.9.1:** Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Potentially Significant Impact.

Construction. Construction of the proposed Project would temporarily increase the regional transport, use, and disposal of construction-related hazardous materials and petroleum products (e.g., diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). These materials are commonly used at construction sites, and the construction activities would be required to comply with applicable State and federal regulations for proper transport, use, storage, and disposal of excess hazardous materials and hazardous construction waste. In addition, Regulatory Compliance Measures WQ-1 and WQ-4 (refer to Section 4.10 of this EIR) requires compliance with the waste discharge permit requirements to avoid potential impacts to water quality due to spills or runoff from hazardous materials used during construction.

Hazardous waste might also be generated during demolition, excavation, or other activities that require the removal of potential hazardous building materials (e.g., ACMs, lead-based paint, mercury, and PCBs) or unknown hazardous materials. The demolition of structures containing hazardous building materials requires specialized procedures and equipment and appropriately certified personnel. Procedures for handling and disposal of hazardous building materials is specified in Mitigation Measure 4.9.1, Demolition Plan. The plan will specify how to appropriately contain, remove, and dispose of hazardous building materials to protect human health and the environment. Any suspect hazardous materials unearthed during construction would require work be stopped as well as notification to OCFA for evaluation, which could

require testing, removal, and disposal at appropriate facilities in accordance with State and federal regulations. Procedures for handling suspect or unknown hazardous materials are specified in Mitigation Measure 4.9.2, Construction Contingency Plan. Therefore, with implementation of Mitigation Measures 4.9.1 and 4.9.2, impacts related to the routine transport, use, or disposal of hazardous materials during construction would be less than significant.

Operation. Operation and maintenance of the Project would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of residential and school facilities. The City of Lake Forest, County of Orange, and contracted solid waste disposal providers are required to ensure that hazardous materials are disposed of at appropriate facilities. Provision of educational pamphlets and special pickups/disposal sites for household hazardous waste and electronic waste provided by these entities minimizes the potential for improper disposal of these substances. Therefore, impacts related to the routine transport, use, or disposal of hazardous materials during operation and maintenance would be less than significant, and no mitigation is required.

Threshold 4.9.2: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potentially Significant Impact. Reasonably foreseeable upset and accident conditions have the potential to occur during demolition and excavation activities because of the amount of construction activity and ground disturbance. Residential and school development on the Project site would not result in substantial reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment because these land uses do not involve the use or handling of substantial quantities of hazardous materials or acutely hazardous materials.

As discussed in the Threshold 4.9.1 analysis, a Demolition Plan and procedures for handling unknown hazardous materials during construction are specified in Mitigation Measures 4.9.1 and 4.9.2, respectively. Therefore, with implementation of Mitigation Measures 4.9.1 and 4.9.2, impacts related to reasonably foreseeable upset and accident conditions would be less than significant with mitigation incorporated.

Threshold 4.9.3: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Potentially Significant Impact. As discussed in the Initial Study, as part of the Project, the Project Applicant/Developer would offer land to the Saddleback Valley Unified School District (SVUSD) for construction of an elementary school with a capacity of 1,000 students on the Project site. The elementary school would be located on the corner of Bake Parkway and Rancho Parkway, at the northwestern portion of the Project site. In addition, five other schools are within or just outside of a 0.5 mi radius of the Project site.

Construction. There is the potential for hazardous emissions during demolition and excavation activities as discussed in the Threshold 4.9.1 analysis. There is no plan to use acutely hazardous materials during construction or operation. As discussed in the Threshold 4.9.1 analysis, specific steps to comply with regulatory requirements for use, storage, and disposal of hazardous materials and waste would be addressed through implementation of a Demolition Plan and a Construction Contingency Plan during construction (Mitigation Measures 4.9.1 and 4.9.2, respectively). Therefore, with implementation of Mitigation Measures 4.9.1 and 4.9.2, impacts related to hazardous emissions or handling of hazardous materials during construction would be less than significant for the Project site and nearby schools.

Section 4.9.2 summarizes the findings of the Phase I and Phase II ESAs (Hillman Consulting 2018a,b) conducted on the site, which indicate there are potential hazardous building materials (e.g., ACMs, lead-based paint, mercury, PCBs) on the Project site that would need to be evaluated and removed prior to demolition (required by Mitigation Measure 4.9.1). However, there are no current RECs associated with the Project site. Therefore, the 2018 Phase I and Phase II ESAs did not identify any further investigation required for development of the Project site with residential structures.

Operation. As discussed in the Threshold 4.9.1 analysis, operation and maintenance of the Project site would involve the use and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of residential and school facilities. Existing regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities, and no mitigation is required.

However, as discussed in Section 4.9.3, there are State Education Code requirements related to the screening of future school sites for the presence of hazardous materials that must be overseen by the DTSC, and the DTSC must make a determination that “No Further Action” is required prior to approval of a site for school development that receives State funding. It is expected that the Saddleback Valley Unified School District would apply for State funding for the new elementary school.

In order to gain approval for development of a school at the Project site that would receive State funding, previous Phase I and II ESAs (Hillman Consulting 2018a, 2018b; ENGEO 2016) would need to be submitted to the DTSC for review, and the DTSC would determine whether or not additional sampling and analysis, preparation of a Preliminary Endangerment Assessment (PEA), site remediation, and public review of reports are required in order to obtain a finding of “No Further Action”. Mitigation Measure 4.9.3, DTSC Oversight of School Site, includes the outline of the process for a DTSC finding of “No Further Action”; therefore, with implementation of Mitigation Measure 4.9.3, impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school would be less than significant.

Electromagnetic Field. As discussed in Section 4.9.2, there currently are SCE 66 kV double-circuit overhead transmission lines that are within a 20 ft wide SCE easement along the south side of Bake Parkway that run parallel to the northwestern boundary of the proposed school site. The

southern edge of the SCE easement would be the school's northwestern property line. As part of the Project, these 66 kV lines would be undergrounded prior to construction of the proposed school on the Project site. CCR, Title 5, Section 14010(c) specifies a distance setback requirement of 25 ft from 50 kV to 130 kV underground power lines for proposed school sites.

CDE allows an exemption to measure the setback distance from the centerline of the transmission line instead of the edge of the easement if it can reasonably be assumed that the utility would not place the utility line closer to the school site within the easement. Because the SCE easement is relatively narrow at this location (i.e., 20 ft wide), it is reasonable to assume that the undergrounded transmission lines would be placed in the center of the easement to maximize the space needed by SCE for future maintenance and repairs. Assuming the undergrounded lines are in the center of the SCE easement, the 25 ft setback zone would encroach 15 ft onto the northwestern portion of the school site.

The CDE Power Line Setback Exemption Guidance Policy requires an electromagnetic field (EMF) study and an exemption request to be prepared for limited activity uses (i.e., landscaping, parking lots, driveways) within any setback zone. SVUSD would prepare the final proposed school site plan and would be responsible for confirming that hardcourts and a grass playfield are not located within the setback zone. These uses are considered unrestricted uses, and CDE would require preparation of an EMF Management Plan for the school site if unrestricted uses (classrooms, athletic fields, and joint-use facilities) are proposed within the setback zone. Conformance with existing regulations and CDE requirements would ensure that impacts related to EMF would be less than significant. No mitigation is required.

Threshold 4.9.4: Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The 2018 Phase I ESA (Hillman Consulting 2018b) determined the Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and there are no current RECs associated with the Project site. Therefore, the Project site is not a hazardous materials site that would create a significant hazard to the public or the environment.

Threshold 4.9.6: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Potentially Significant Impact.

Construction. Development of the proposed Project would require excavation of the site; delivery of materials, equipment, and personnel; demolition of the 1,744-square-foot (sf) existing structure on the Project site; undergrounding of utilities; construction of the buildings; and installation of landscaping. The proposed Project would be implemented over an estimated period of 67 months (approximately 5.5 years). Demolition and site preparation would span approximately 3 months, and grading would span approximately 12 months. Paving and infrastructure would take approximately 4 months and 12 months, respectively, and would

occur concurrently. Building construction would be implemented over an estimated period of 46 months.

Construction activities have the potential to affect emergency access by requiring partial lane closures during street improvements and utility installation or by increasing emergency vehicle response times. Mitigation Measure 4.16.1 requires that a Construction Traffic Management Plan (CTMP) be prepared for the proposed Project to ensure that emergency vehicles would be able to navigate through streets adjacent to the Project site that may experience congestion due to construction activities. Mitigation Measure 4.16.1 also requires that all emergency access to the Project site and adjacent areas be kept clear and unobstructed during all phases of demolition and construction. Traffic management personnel (flag persons), required as part of the CTMP, would be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. If a partial street closure (i.e., a lane closure) would be required, notice would be provided to the Orange County Sheriff's Department, and flag persons would be used to facilitate the traffic flow until construction is complete. With implementation of Mitigation Measure 4.16.1, potential impacts related to emergency access during construction would be less than significant. No additional mitigation is required.

Operation. The proposed Project would take access from three existing intersections (one traffic signal on Bake Parkway, one unsignalized intersection on Bake Parkway, and one traffic signal on Rancho Parkway). The access analysis presented in the *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c) demonstrates that each of these intersections is anticipated to operate at a satisfactory level of service (LOS). Existing routes for emergency vehicles would not be impeded by the Project, and emergency vehicles would have multiple routes to access the Project site. Further, as part of the Project approval process, emergency access to/from the site would be required to meet all applicable City codes and standards. OCFA approved a conceptual Fire Master Plan (refer to Figure 4.19.1) in February 2018, a conceptual Fire Protection Plan with Ember Mitigation (refer to Figure 4.19.2) in January 2018, and a conceptual Fuel Modification Plan (refer to Figure 4.19.3) in March 2018. The Fire Master Plan and Fire Protection Plan address specific fire prevention and access elements required by the City of Lake Forest Municipal Code and the California Building Code (CBC). The Fire Master Plan establishes the proper location and adequacy of fire suppression facilities as well as fire access routes on the Project site. The Fire Master Plan also identifies the locations of fire hydrants, a water supply for firefighting, and emergency access to residences and structures on the Project site. According to OCFA, adherence to the elements of the Fire Master Plan is directly correlated with the effectiveness of first responders, including fire and emergency medical personnel. The proposed Project meets or exceeds the requirements of OCFA to not hinder fire access and fire department and operations for the planned community. Further, OCFA actively enforces codes and ordinances to ensure a reasonable degree of fire safety exists in facilities and occupancies to minimize the threat to life and property. This activity is ongoing and conducted daily and would occur on the Project site during Project operation. Comprehensive pre-emergency planning, fire protection engineering, and training programs are currently in place and are designed to ensure the Department's ability to meet future service demands including service demands related to emergency response and emergency evacuation. Therefore, the proposed

Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, Impacts would be less than significant and no mitigation measures are required.

4.9.7 Cumulative Impacts

The hazardous materials study area considered for cumulative impacts consisted of the Project site and surrounding properties (i.e., structures and activities on these properties) that could directly or indirectly affect the presence or fate of hazardous materials on the Project site. In general, only projects occurring adjacent to or very close to the Project site are considered due to the limited potential impact area associated with release of hazardous materials into the environment.

In the existing condition, the Project site may contain hazardous building materials, but these materials would not present a hazard until they are disturbed, leaking, or are damaged. Mitigation Measure 4.9.1 addresses the procedures for handling and disposal of these materials prior to demolition activities. The 2018 Phase I ESA (Hillman Consulting 2018b) did not identify any current hazards associated with building materials on the Project site. In addition, the 2018 Phase I ESA did not identify any RECs for the Project site based on on-site or off-site conditions. For any site with previous commercial or industrial use, there is the potential for unknown hazardous materials to be encountered during excavation activities. Mitigation Measure 4.9.2 includes standard procedures to address handling and disposal of previously unknown hazardous materials encountered during excavation.

With the exception of hazardous materials transport, the proposed Project would not create potential significant cumulative impacts off site. Transport of hazardous materials is closely regulated and, with implementation of Mitigation Measures 4.9.1 through 4.9.3, would be adequately monitored to ensure there would be no significant impact to the environment or to human health. In addition, the California Department of Transportation (Caltrans), the California Highway Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, further reducing potential impacts.

The proposed Project would be required to comply with OCSD and OCFA requirements for emergency access and egress such that emergency response and evacuation would not be impaired.

For the reasons identified above, the proposed Project would not result in a significant contribution to cumulative hazards or hazardous materials impacts.

There are no known projects in the vicinity of the Project site that could be affected by on-site handling of hazardous materials or that could result in significant hazards or hazardous materials impacts at the Project site.

The transport of hazardous materials from and to the project site during construction and operation has the potential to combine with impacts from transport of hazardous materials from other projects in adjacent cities on the State highway system. However, the transport of hazardous materials is subject to strict regulations, and local and State agencies are trained in emergency

response procedures. Therefore, the temporary transport of existing hazardous materials and the future transport of household hazardous materials to and from the project site do not present a significant cumulative hazard.

For the reasons outlined above, implementation of the proposed Project would not result in a significant cumulative impact related to hazards and hazardous materials.

4.9.8 Level of Significance Prior to Mitigation

Potential impacts related to the routine transport, use, or disposal of hazardous materials and reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be potentially significant prior to implementation of mitigation measures. Similarly, potential impacts related to hazardous emissions and the handling of hazardous materials, substances, or waste within 0.25 mi of a proposed school would be significant prior to mitigation implementation. The Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5; therefore, no mitigation is required. Construction activities have the potential to affect emergency access by requiring partial lane closures during street improvements and utility installation or by increasing emergency vehicle response times; mitigation is required.

4.9.9 Mitigation Measures

Mitigation Measure 4.9.1: Demolition Plan. Prior to or concurrent with demolition permit applications, the Construction Contractor shall provide a Demolition Plan to the City of Lake Forest Director of Community Development or designee for review and approval. The Demolition Plan shall include the procedures for pre-demolition surveys and testing for hazardous building materials such as asbestos, lead-based paint, mercury, and polychlorinated biphenyls, and removal and disposal of hazardous building materials. All inspections, surveys, and analyses shall be performed by appropriately licensed and qualified individuals in accordance with applicable regulations. All identified hazardous materials shall be removed, handled, and properly disposed of by appropriately licensed contractors according to all applicable regulations during demolition of structures. The Construction Contractor shall provide documentation (e.g., all required waste manifests, sampling, and air monitoring analytical results) to the City of Lake Forest Director of Community Development or designee showing that abatement of hazardous building materials has been completed in full compliance with all applicable regulations. The City of Lake Forest Director of Community Development or designee shall document that the Demolition Plan has been approved prior to issuance of demolition permits and that the requirements of the Demolition Plan have been implemented prior to issuance of grading permits.

Mitigation Measure 4.9.2

Construction Contingency Plan. Prior to or concurrent with grading permit applications, the Construction Contractor shall provide a Construction Contingency Plan to the City of Lake Forest Director of Development Services or designee for review and approval. The Construction Contingency Plan shall include provisions for emergency response in the event that unidentified hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes are discovered during construction activities. The Construction Contingency Plan shall address field screening, contaminant materials testing methods, mitigation and contaminant management requirements, and health and safety requirements for construction workers. The construction contractor shall implement the Construction Contingency Plan during all construction activities. During construction, the construction contractor shall cease work immediately if an unexpected release of hazardous substances is found in reportable quantities. If an unexpected release of hazardous substances is found in reportable quantities, the construction contractor shall notify the National Response Center by calling 1-800-424-8802. The Construction Contractor shall clean up any unexpected releases under appropriate federal, State, and local agency oversight. The City of Lake Forest Director of Community Development or designee shall document that the Construction Contingency Plan has been approved and that the requirements of the Construction Contingency Plan have been implemented prior to the first final building inspection issuance of certificate of occupancy.

Mitigation Measure 4.9.3

DTSC Oversight of School Site. Prior to commencement of precise ~~submittal~~ of grading permits for the elementary school portion of the Project site, the Saddleback Valley Unified School District ~~Project Applicant~~ shall provide documentation to the California Division of the State Architect ~~City of Lake Forest Director of Community Development or designee~~ that the Department of Toxic Substances Control (DTSC) has issued a "No Further Action" letter for the school site. The steps that may be required in order to gain a "No Further Action" letter from DTSC could include: DTSC review of all Phase I and Phase II ESAs for the project site; soil and/or groundwater testing, health risk analysis, Preliminary Endangerment Assessment preparation and approval, site remediation/cleanup, and public review of prepared reports.

4.9.10 Level of Significance after Mitigation

All impacts would be less than significant after implementation of Mitigation Measures 4.9.1 through 4.9.3.

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4.10 HYDROLOGY AND WATER QUALITY

This section evaluates the potential impacts to hydrology and water quality conditions from implementation of the Nakase Nursery/Toll Brothers Project (proposed Project). The analysis in this section is based in part on the *Preliminary/Conceptual Water Quality Management Plan* (Hunsaker & Associates 2019b) (Appendix I), the *Preliminary Hydrology Analysis* (Hunsaker & Associates 2019a) (Appendix I), the *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical, Inc. 2017) (Appendix F), and the *Preliminary Geotechnical Exploration* (NMG Geotechnical, Inc. 2018) (Appendix F) that were prepared for the proposed Project and are included in this Environmental Impact Report (EIR).

4.10.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Five comment letters included comments related to hydrology and water quality.

The letter from Orange County Public Works (OCPW) (August 13, 2018) expressed concern about whether the project would result in increased development runoff and requested that the EIR identify and recommend mitigation for these impacts. OCPW also noted that all hydrological and hydraulic studies should comply with current guidelines and criteria specified in the *Orange County Hydrology Manual* and the *Orange County Flood Control Design Manual*. They commented that the City should approve the hydrology and hydraulic analyses to confirm that the proposed Project is protected from erosion and flooding in a 100-year storm event. Additionally, OCPW noted that an encroachment permit would be required for any project work within the Orange County Flood Control District (OCFCD) right-of-way.¹ They also suggested that the City ensure that floodplains are identified and structures conform to Federal Emergency Management Agency (FEMA) regulations.

The letter from the Santa Ana Regional Water Quality Control Board (RWQCB) (August 15, 2018) expressed concern related to the National Pollutant Discharge Elimination System (NPDES) permitting and control of residual nitrogen leaving the Project site and suggested Best Management Practices (BMPs) and mitigation to address impacts from stormwater runoff into waters of the United States (i.e., Serrano Creek). They also expressed concern with the adequacy of the proposed underground detention basin and increased peak flows downstream of the Project site. They asked if the basin could destabilize Serrano Creek. The Santa Ana RWQCB also requested clarification of whether the on-site drainage channel would be filled in or replaced with a concrete channel. They suggested maintaining the flow gaging stations at locations where Serrano Creek and the unnamed interior drainage channel exit the Project site, and noted a Water Quality Standards Certification would be required for any impacts to Serrano Creek or the unnamed interior drainage channel.

¹ Please note that although OCPW expressed concern about encroachment into OCFCD right-of-way, the proposed Project would not include improvements within OCFCD right-of-way and no encroachment permit would be required.

The letter from the California Department of Transportation (Caltrans) (August 13, 2018) expressed concern regarding the mitigation of hydrology and water quality impacts, particularly those related to discharges entering Caltrans right-of-way.¹ Additionally, Caltrans recommended coordination with the OCFCD during the encroachment permit process, which would be required if the proposed Project would require any work within State Highway System lands.

The letter from Judy Esposito (August 6, 2018) expressed concern about water quality in waterways receiving runoff from the Project site. The letter from the Autumnwood Homeowners Association (HOA) (August 8, 2018) requested a full analysis of Serrano Creek flooding impacts, including slope stability and erosion. They also noted that CEQA requires a discussion of the Project's consistency with regional flood control and erosion control plans in the EIR.

4.10.2 Existing Environmental Setting

4.10.2.1 Surface Waters

The Project site is located within the San Diego Creek Watershed, which is a subwatershed of the larger 154-square-mile (sq mi) Newport Bay Watershed. The Newport Bay Watershed is defined by the foothills of the Santa Ana Mountains to the east (Loma Ridge), and the San Joaquin Hills to the west and southwest.² The San Diego Creek Watershed is approximately 112 sq mi in area and located in parts of Irvine, Aliso Viejo, Laguna Hills, Laguna Woods, Lake Forest, Orange, Santa Ana, and Tustin.

For regulatory purposes, the Santa Ana RWQCB designates watershed areas in Hydrologic Units (HUs), which are further divided into Hydrologic Areas (HAs) and Hydrologic Subareas (HSAs). As designated by the Santa Ana RWQCB, the Project site is located within the Santa Ana River HU, Lower Santa Ana River HA, and East Coast Plain HSA (Santa Ana RWQCB 1995).

The Project site is bound on the southeast by Serrano Creek. Serrano Creek is an approximately 7.5-mile (mi) long tributary of San Diego Creek. Serrano Creek originates in the Santa Ana Mountains in a canyon in Whiting Ranch Wilderness Park, near the boundary of the Cleveland National Forest. From the Santa Ana Mountains, Serrano Creek then flows southwest into the City of Lake Forest, then into San Diego Creek, Newport Bay, and the Pacific Ocean. Serrano Creek carries intermittent flows.

4.10.2.2 On-Site Drainage

In the existing condition, on-site drainage is divided into two drainage areas. Drainage Area "A" consists of the western/northwestern portion of the site (approximately 76.6 acres [ac]). Stormwater runoff within Drainage Area "A" drains southwesterly via sheet flow. Flow then channelizes in an on-site natural and partly paved drainage system that connects to an existing

¹ Please note that although Caltrans expressed concern about stormwater discharge to Caltrans right-of-way, stormwater from the Project site would not drain to Caltrans right-of-way.

² United States Environmental Protection Agency (EPA). Newport Bay Watershed. Website: <https://19january2017snapshot.epa.gov/www3/region9/water/watershed/measurw/newport-bay/index.html> (accessed June 22, 2019).

10.5 x 10.5-foot (ft) reinforced concrete box and the existing storm drain system (OCFCD Facility No. F19-P07), located along the southwest Project site boundary. This existing storm drain system discharges into Serrano Creek approximately 0.6 mi to the southwest of the Project site. Run-on to Drainage "A" consists of runoff from off-site areas to the north of the Project site (approximately 227.9 ac) that discharge into the Project site via an existing 84-inch reinforced concrete pipe (RCP) at Rancho Parkway and Corridor Center. Total tributary area (on site and off site) to the OCFCD Facility No. F19-P07 connection is 304.45 ac.

Drainage Area "B" consists of the eastern/southeastern portion of the Project site (approximately 43.4 ac). Stormwater runoff within Drainage Area "B" drains southeasterly via sheet flow. Flow then channelizes in an on-site natural and partly paved drainage prior to discharging to Serrano Creek via OCFCD Facility No. F19, which is located along the southern corner of the Project site. There is no off-site run-on to Drainage Area "B".

The Project site discharges directly to an Environmentally Sensitive Area (ESA). Serrano Creek is considered an ESA because it is listed as impaired on the 2014/2016 California 303(d) List of Water Quality Limited Segments (303[d] list), as discussed further below.

4.10.2.3 Surface Water Quality

As discussed in greater detail in Section 4.10.4, Methodology, the receiving waters for stormwater runoff from the Project site are impaired on the 303(d) list for several constituents. Serrano Creek is listed as impaired for ammonia, indicator bacteria, pH, benthic community effects, and toxicity. San Diego Creek (Reach 2 – above Jeffrey Road to the headwaters) is listed as impaired for indicator bacteria, nutrients, sedimentation/siltation, and unknown toxicity. San Diego Creek (Reach 1 – below Jeffrey Road) is listed as impaired for fecal coliform, selenium, toxaphene, nutrients, pesticides, sedimentation/siltation, benthic community effects, dichlorodiphenyltrichloroethane (DDT), malathion, and toxicity. Upper Newport Bay is listed as impaired for chlordane, copper, DDT, indicator bacteria, metals, nutrients, polychlorinated biphenyls (PCBs), pesticides, sediment toxicity, sedimentation/siltation, and malathion. Lower Newport Bay is listed as impaired for chlordane, copper, DDT, indicator bacteria, nutrients, PCBs, pesticides, and sediment toxicity.

4.10.2.4 Groundwater

According to the California Department of Water Resources (DWR), the Project site is within the Coastal Plain of the Orange County Groundwater Basin. The Coastal Plain of the Orange County Groundwater Basin is bounded on the north by the Puente Hills and Chino Hills, on the east by the Santa Ana Mountains, on the south by the San Joaquin Hills, on the southwest by the Pacific Ocean, and on the northwest by a low topographic divide at approximately the Orange County-Los Angeles County line (DWR 2004).

For regulatory purposes, the Santa Ana RWQCB divides the Coastal Plain of Orange County Groundwater Basin into three Groundwater Management Zones. The Project site is within the Irvine Groundwater Management Zone (Santa Ana RWQCB 1995). The Irvine Groundwater Management Zone is bounded to the north by the Chino Hills, to the northeast by the Santa Ana Mountains, to

the south by the San Joaquin Hills, to the southwest by the Pacific Ocean, and to the northwest by State Route 55 (SR-55).

Recharge to the Coastal Plain of the Orange County Groundwater Basin occurs from percolation of the Santa Ana River flow, infiltration of precipitation, and injection into wells (DWR 2004). A portion of the flow from the Santa Ana River directly below Prado Dam is diverted to recharge groundwater (Santa Ana RWQCB 2004).

According to the *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical, Inc. 2017) and the *Preliminary Geotechnical Exploration* (NMG Geotechnical, Inc. 2018) that were prepared for the proposed Project, groundwater is present within the alluvium beneath the Project site. The groundwater encountered during the geotechnical evaluation ranged from 20 to 45 ft below ground surface (bgs). Based on maps published by the State of California, the historic high groundwater levels at the site ranged from 15 to 20 ft bgs. Currently, there is a water well located in the southwest corner of the Project site that provides irrigation water for the nursery operation.

4.10.2.5 Groundwater Quality

Water in the Coastal Plain of the Orange County Groundwater Basin is primarily sodium-calcium bicarbonate based. Total dissolved solids range from 232 to 661 milligrams per liter (mg/L) and average 475 mg/L. Near the coast, groundwater is impaired from seawater intrusion. Groundwater is impaired by salinity, nitrate, and methyl tertiary-butyl ether (MTBE) (DWR 2004).

4.10.2.6 Floodplains

According to FEMA Flood Insurance Rate Map (FIRM) Map No. 06059C0316J (December 3, 2009), a portion of the Project site along the southeast boundary is located within Zone AO of the Serrano Creek 100-year floodplain. Zone AO is defined by FEMA as a Special Flood Hazard Area subject to inundation by the 1 percent annual chance flood (100-year flood) with flood depths between 1 ft and 3 ft. However, a Letter of Map Revision (LOMR) became effective on July 16, 2018, after a 90-day appeal period, and affects the floodplains mapped on the Project site. The proposed LOMR was noticed to the public in the Saddleback Valley News on March 9 and 16, 2018. The LOMR changed the portion of the Serrano Creek adjacent to the Project site to Zone AE (i.e., areas subject to inundation by the 1 percent annual chance flood event determined by detailed methods with base flood elevations shown). The LOMR revised the FIRM to remove a majority of the southeastern boundary of the Project site from the 100-year floodplain. Only the southern corner of the Project site remains mapped within a 100-year floodplain.

4.10.3 Regulatory Setting

4.10.3.1 Federal Regulations

Clean Water Act. In 1972, the Federal Water Pollution Control Act (now referred to as the Clean Water Act [CWA]) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with an NPDES permit. In 1987, the CWA was again amended to require that the United States

Environmental Protection Agency (EPA) establish regulations for the permitting of storm water discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are set concentrations or levels of constituents (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that support a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, the EPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (often with a “factor of safety” included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body.

Direct discharges of pollutants into waters of the United States are not allowed except in accordance with the NPDES program established in Section 402 of the CWA.

Clean Water Act, Section 303, List of Impaired Water Bodies. The State Water Resources board (SWRCB), in compliance with Section 303(d) of the CWA, prepared a 2014/2016 list of impaired water bodies in California. The SWRCB approved the 2014/2016 California Integrated Report (CWA Section 303(d) List/305(b) Report) on October 3, 2017. On April 6, 2018, the EPA approved the 2014/2016 California 303(d) List of Water Quality Limited Segments (303[d] list) The 303(d) list includes a priority schedule for the development of TMDL implementation for each contaminant impacting the water body.

Serrano Creek is listed on the 303(d) list as impaired for ammonia, indicator bacteria, pH, benthic community effects, and toxicity. San Diego Creek (Reach 2) is listed as impaired for indicator bacteria, nutrients, sedimentation/siltation, and unknown toxicity. San Diego Creek (Reach 1) is listed as impaired for fecal coliform, selenium, toxaphene, nutrients, pesticides, sedimentation/siltation, benthic community effects, DDT, malathion, and toxicity. Upper Newport Bay is listed as impaired for chlordane, copper, DDT, indicator bacteria, metals, nutrients, PCBs, pesticides, sediment toxicity, sedimentation/siltation, and malathion. Lower Newport Bay is listed as impaired for chlordane, copper, DDT, indicator bacteria, nutrients, PCBs, pesticides, and sediment toxicity.

National Flood Insurance Act. Congress acted to reduce the costs of disaster relief by passing the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief efforts by restricting development in floodplains. FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in a floodplain. FEMA issues FIRMs of communities participating in the NFIP. These maps delineate flood hazard zones in the community. The City of Lake Forest manages local storm drain facilities, and the OCFCD is responsible for regional flood control planning within Orange County.

4.10.3.2 State Regulations

Porter-Cologne Water Quality Control Act of 1970. The federal CWA places the primary responsibility for the control of water pollution and planning the development and use of water resources with the states, although it does establish certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and the nine RWQCBs broad powers to protect water quality and is the primary vehicle for the implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface water and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste. The City, including the Project site, is within the jurisdictional boundaries of the Santa Ana RWQCB (Region 8).

California Toxics Rule. As stated previously, because California had not established a complete list of acceptable water quality criteria for toxic pollutants, EPA Region IX established numeric water quality criteria for toxic constituents in the form of the CTR. The CTR provides water quality criteria for certain potentially toxic compounds for inland surface waters, enclosed bays, estuaries, and waters designated for human health or aquatic life uses. The CTR is often used by the RWQCBs when establishing water quality objectives and TMDLs. Although the CTR criteria do not apply directly to discharges of storm water runoff, they are utilized as benchmarks for toxics in urban runoff. The CTR is used as a benchmark to evaluate the potential ecological impacts of storm water runoff to receiving waters. The CTR establishes acute and chronic surface water quality standards for certain water bodies. Acute criteria provide benchmarks for the highest permissible concentration below which aquatic life can be exposed for short periods of time without deleterious effects. Chronic criteria provide benchmarks for an extended period of time (i.e., 4 days or more) without

deleterious effects. The acute CTR criteria have a shorter relevant averaging period (less than 4 days) and provide a more appropriate benchmark for comparison for storm water flows.

CTR criteria apply to the receiving water body and are calculated based on the probable hardness values of the receiving waters. At higher hardness values for receiving waters, certain constituents (including copper, lead, and zinc) are more likely to be complexed (bound with) components in the water column. This in turn reduces the bioavailability and resulting potential toxicity of these metals.

Total Maximum Daily Load Requirements. The following TMDLs apply to San Diego Creek, and Upper and Lower Newport Bay, which are downstream receiving waters for the Project site. There are no approved TMDLs for Serrano Creek.

- **Pesticides:** The EPA issued mass-based TMDLs for legacy pesticides (e.g., chlordane, dieldrin, and DDT), PCBs, and organophosphate pesticides (diazinon and chlorpyrifos) for all water bodies in the Newport Bay Watershed, including San Diego Creek. Legacy pesticides are pesticides that are banned or restricted by the EPA. Because their rate of decomposition is slow, these pesticides frequently remain at elevated levels in the environment for years after their widespread use has ended. The EPA TMDLs did not specify implementation plans and left that responsibility up to the RWQCB. The Santa Ana RWQCB adopted a Water Quality Control Plan (Basin Plan) amendment in April 2003 to incorporate a diazinon and chlorpyrifos TMDL and implementation plan into the Basin Plan. The RWQCB adopted a Basin Plan amendment on September 7, 2007, to incorporate an organochlorine compound TMDL and implementation plan for San Diego Creek and Newport Bay into the Basin Plan (Resolution No. 2012-0051). In 2003, the Santa Ana RWQCB adopted an amendment to the Basin Plan to incorporate a TMDL for diazinon and chlorpyrifos for the San Diego Creek and Upper Newport Bay (Resolution No. R8-2003-0039).
- **Metals:** The EPA established TMDLs for dissolved cadmium, copper, lead, and zinc in Newport Bay on June 14, 2002. The TMDL targets are expressed as concentration limits, based on the CTR criteria at various hardness values associated with different flow regimes. The concentration-based TMDLs apply to all freshwater discharges into Lower Newport Bay, including discharges from agricultural, urban, and residential lands (including flows from stormwater systems).

The Santa Ana RWQCB is in the process of adopting an amendment to the Basin Plan (Resolution No. R8-2018-0071) to incorporate a TMDL for copper and non-TMDL action plans for zinc, mercury, arsenic, and chromium. The draft amendment was circulated for public review in the Fall of 2018. Public workshops for the TMDL and action plans were held in May 2019.

- **Nutrients:** The Santa Ana RWQCB adopted an amendment to the Basin Plan in 1998 establishing a TMDL for nutrients in the Newport Bay/San Diego Creek Watershed (Resolution No. 98-9, as amended by Resolution No. 98-100).

- The nutrient TMDLs for the Newport Bay/San Diego Creek Watershed establish targets for reducing the annual loading of nitrogen and phosphorus to Newport Bay by 50 percent and meeting the narrative and numeric water quality objectives by 2012.
- For nitrogen, the overall annual target is divided into a summer season allocation and a winter season allocation. Attainment is to be achieved in two stages: a 30 percent and 50 percent reduction in summer loads by 2002 and 2007, respectively, and a 50 percent reduction in winter loads by 2012.
- For phosphorus, the attainment targets require either a 30 percent and 50 percent reduction by 2002 and 2007, respectively, or a reduction of total annual loads of 86,912 pounds (lbs) by 2002 and 62,080 lbs by 2007.
- **Selenium:** The EPA TMDL (2002) load targets for the metal selenium in Lower Newport Bay are established in pounds per year and are based on a water quality criteria of 71 micrograms per liter ($\mu\text{g/L}$) dissolved selenium. The TMDL load targets include flows from storm drain systems, open space, nurseries, agricultural uses, dewatering, and groundwater pumping operations. In 2017, the Santa Ana RWQCB adopted an amendment to the Basin Plan to incorporate a TMDL for selenium in the Newport Bay Watershed (Resolution No. 218-0041).
- **Sediment:** In 1998, the Santa Ana RWQCB adopted phased sediment TMDL targets for the Newport Bay Watershed (Resolution No. 98-69, as amended by Resolution No. 98-101). An initial TMDL target was to reduce the annual average sediment load from 250,000 to 125,000 tons per year (tpy) and to capture half the remaining sediments in sedimentation basins, limiting the total load to Newport Bay to 62,500 tpy. The base existing load of 250,000 tpy was derived from the local sediment control plan (the 2008 plan). Recognizing the episodic nature of sediment loads, the TMDLs are defined in terms of 10-year running annual averages. As part of the TMDL, monitoring data and information are collected by the Newport Bay Watershed Executive Committee. The Santa Ana RWQCB will use the data collected by this monitoring program to reevaluate the sediment TMDL as part of its planning process.
- **Fecal Coliform:** In 1999, the Santa Ana RWQCB amended the Basin Plan by adopting TMDLs for fecal coliform in Newport Bay (Resolution No. 99-10, amended by Order No. R8-2010-0062). The Santa Ana RWQCB has adopted phased TMDL criteria for fecal coliform bacteria in Newport Bay, with the initial focus on additional monitoring and assessment to address areas of uncertainty. The TMDL load targets include flows from storm drain systems, agricultural uses, natural sources, and vessel waste. The waste load allocation for fecal coliform in Newport Bay in urban runoff, including stormwater, and in agricultural runoff that must be met by December 30, 2013, are as follows: the geometric mean must be less than 200 organisms/100 milliliters (mL), and not more than 10 percent of the samples can exceed 400 organisms/100 mL for any 30-day period. This waste load allocation is already in effect for fecal coliform from natural sources and from vessel waste. The waste load allocation for fecal coliform in Newport Bay in urban runoff (including stormwater), agricultural runoff, and from natural sources that must be met by December 30, 2019, are as follows: the monthly median must be less than 14 most probable number (MPN)/100 mL, and not more than 10 percent of the samples can exceed 43 MPN/

100 mL. This waste load allocation is already in effect for vessel waste. Order R8-2019-0050 set a time schedule for the permittees to comply with the TMDL requirements.

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

The Construction General Permit requires that all developers of land where construction activities will occur over more than 1 ac do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the General Permit;
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States;
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies BMPs that will reduce pollution in stormwater discharges to the Best Available Technology/Economically Achievable/Best Conventional Pollutant Control Technology standards;
- Perform inspections and maintenance of all BMPs; and
- Conduct stormwater sampling, if required based on risk level.

To obtain coverage under the Construction General Permit, a project applicant must electronically file all permit registration documents with the SWRCB prior to the start of construction. Permit registration documents must include a:

- Notice of Intent (NOI),
- Risk Assessment,
- Site map,
- SWPPP,
- Annual fee, and
- Signed certification statement.

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

Sustainable Groundwater Management Act. The Sustainable Groundwater Management Act (SGMA) of 2014 is a comprehensive three-bill package that Governor Jerry Brown signed into California state law in September 2014. The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for State intervention if necessary to protect the resource. The plan is intended to ensure a reliable groundwater supply for California for years to come.

The SGMA requires governments and water agencies of high- and medium-priority basins to halt overdrafts of groundwater basins. The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins.

4.10.3.3 Regional Regulations

Water Quality Control Plans (Basin Plans). The Santa Ana RWQCB has adopted a Basin Plan for their region of responsibility that delineates water resource area boundaries based on hydrological features. For the purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the surface waters and groundwater management zones described in the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established, and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses.

Beneficial uses of surface receiving waters for the Project site are shown in Table 4.10.A. As shown in Table 4.10.A, beneficial uses of surface receiving waters for the Project site include: groundwater recharge (GWR); navigation (NAV); water contact recreation (REC1); non-contact water recreation (REC2); commercial and sport fishing (COMM); warm freshwater habitat (WARM); preservation of biological habitats of special significance (BIOL); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); spawning, reproduction and development (SPWN); marine habitat (MAR); shellfish harvesting (SHEL); and estuarine habitat (EST). The surface receiving waters are excepted from the municipal and domestic supply (MUN).

Beneficial uses of the Irvine Groundwater Management Zone include municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC).

Basin Plans also establish implementation programs to achieve water quality objectives to protect beneficial uses and require monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Table 4.10.A: Beneficial Uses of Surface Receiving Waters

Receiving Water	Beneficial Use													
	MUN	GWR	NAV	REC1	REC2	COMM	WARM	BIOL	WILD	RARE	SPWN	MAR	SHEL	EST
Surface Waters														
Serrano Creek	❖	□		□	□		□		□					
San Diego Creek Reach 2 (above Jeffrey Road to headwaters)	❖	□		□	□		□		□					
San Diego Creek Reach 1 (below Jeffrey Road)	❖			● ¹	●		●		●					
Upper Newport Bay	❖			●	●	●		●	●	●	●	●	●	●
Lower Newport Bay	❖		●	●	●	●			●	●	●	●	●	

Source: *Water Quality Control Plan, Santa Ana River Basin* (Santa Ana RWQCB 1995, updated 2008 and 2011).

Note: ● = Existing or Potential Beneficial Use
□ = Intermittent Beneficial Use
❖ = Exempted from MUN

¹ Access prohibited in all or part per agency with jurisdiction.

BIOL = preservation of biological habitats of special significance

COMM = commercial and sport fishing

EST = estuarine habitat

GWR = groundwater recharge

MAR = marine habitat

MUN = municipal and domestic supply

NAV = navigation

RARE = rare, threatened, or endangered species

REC1 = water contact recreation

REC2 = non-contact water recreation

RWQCB = Regional Water Quality Control Board

SHEL = shellfish harvesting

SPWN = spawning, reproduction and development

WARM = warm freshwater habitat

WILD = wildlife habitat

Basin Plans have established narrative and numeric water quality objectives for inland surface streams and groundwater. If water quality objectives are exceeded, the RWQCBs can use their regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. Relevant surface water quality objectives for all inland surface waters, bays and estuaries, and groundwater under the jurisdiction of the Santa Ana RWQCB that are applicable to the receiving waters for the Project site are shown in Tables 4.10.B, 4.10.C, and 4.10.D, respectively.

In addition to the water quality objectives applicable to all surface waters, bays and estuaries, and groundwater, the Santa Ana RWQCB has designated site-specific water quality objectives for waters. The site-specific water quality objectives for San Diego Creek Reach 2 (above Jeffrey Road to the headwaters) are:

- **Total Dissolved Solids:** 720 mg/L
- **Total Inorganic Nitrogen:** 5 mg/L

The site-specific water quality objectives for San Diego Creek Reach 1 (below Jeffrey Road) are:

- **Total Dissolved Solids:** 1,500 mg/L
- **Total Inorganic Nitrogen:** 13 mg/L
- **Chemical Oxygen Demand:** 90 mg/L

Table 4.10.B: Surface Water Quality Objectives for Inland Surface Waters

Constituent	Concentration
Algae	Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.
Ammonia, Un-ionized	Waters with WARM Beneficial Use Designation: Varies based on pH and temperature.
Boron	Shall not exceed 0.75 mg/L in inland surface waters of the region as a result of controllable water quality factors.
Chlorine (residual)	Chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/L.
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other surface water resources used for human consumption shall not be impaired.
Floatables	Waste discharges shall not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.
Metals	Varies based on hardness.
Oil and Grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that result in a visible film or in coating objects in the water or which cause a nuisance or adversely affect beneficial uses.
Oxygen (dissolved)	Waters with WARM Beneficial Use Designation: Shall not be depressed below 5 mg/L as a result of controllable water quality factors. Waste discharges shall not cause the median dissolved oxygen concentration to fall below 85% of saturation or the 95 th percentile concentration or fall below 75% of saturation within a 30-day period.
Pathogen Indicator Bacteria	Waters with REC1 and REC2 beneficial use designations: waste discharges shall not cause or contribute to excessive risk of illness from microorganisms pathogenic to human beings. Pathogen indicator concentrations shall not exceed a geometric mean of at least 5 samples in a 30-day period of 126 E. coli organism per 100 mL as a result of controllable water quality factors unless it is demonstrated to the Regional Board's satisfaction that the elevated indicator concentrations do not result in excessive risk of illness among people recreating in or near the water.
pH	Shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.
Solids (suspended and settleable)	Shall not cause nuisance or adversely affect beneficial uses as a result of water quality factors.
Sulfides	Shall not increase as a result of controllable water quality factors.
Surfactants	Waste discharges shall not contain concentrations of surfactants that result in foam in the course of flow or use of the receiving water or that adversely affect aquatic life.
Taste and Odor	Shall not contain taste- or odor-producing substances at concentrations that cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other regional inland surface water resources used for human consumption shall not be impaired.
Temperature	Waters with WARM beneficial use designation: shall not be raised above 90°F June through October or above 78°F during the rest of the year as a result of controllable water quality factors.
Toxic Substances	Shall not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota shall not adversely affect beneficial uses.
Turbidity	Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%. Where natural turbidity is between 50 NTU and 100 NTU, increases shall not exceed 10 NTU. Where natural turbidity is greater than 100 NTU, increases shall not exceed 10%.

Source: *Water Quality Control Plan, Santa Ana River Basin* (Santa Ana RWQCB 1995, updated February 2016).

°F = degrees Fahrenheit

mg/L = milligrams per liter

mL = milliliter

NTU = nephelometric turbidity units

pH = percentage of hydrogen

REC1 = water contact recreation

REC2 = non-contact water recreation

RWQCB = Regional Water Quality Control Board

WARM = warm freshwater habitat

Table 4.10.C: Surface Water Quality Objectives for Bays and Estuaries

Constituent	Concentration
Algae	Waste discharges shall not contribute to excessive algal growth.
Ammonia, Un-ionized	Waters with WARM beneficial use designation: varies based on pH and temperature.
Chlorine (residual)	Chlorine residual in wastewater discharged to enclosed bays and estuaries shall not exceed 0.1 mg/L.
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other bay and estuarine water resources used for human consumption shall not be impaired.
Floatables	Waste discharges shall not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.
Oil and Grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that result in a visible film or in coating objects in the water or which cause a nuisance or adversely affect beneficial uses.
Oxygen (dissolved)	Shall not be depressed to levels that adversely affect beneficial uses as a result of controllable water quality factors.
Pathogen Indicator Bacteria	Waters with REC1 Beneficial Use: Fecal coliform log mean less than 200 organisms/100 mL based on five or more samples/30-day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period. Water with SHEL Beneficial Use: Fecal coliform median concentration not more than 14 MPN/100 mL and not more than 10% of samples exceed 43 MPN/100 mL.
pH	Shall not be raised above 8.6 or depressed below 7.0 as a result of controllable water quality factors; ambient pH levels shall not be changed more than 0.2 units.
Radioactivity	Shall not be present in concentrations which are deleterious to human, plant, or animal life.
Solids (suspended and settleable)	Shall not cause nuisance or adversely affect beneficial uses as a result of water quality factors.
Sulfides	Shall not increase as a result of controllable water quality factors.
Surfactants	Waste discharges shall not contain concentrations of surfactants that result in foam in the course of flow or use of the receiving water or that adversely affect aquatic life.
Taste and Odor	Shall not contain taste- or odor-producing substances at concentrations that cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish, or other enclosed bay and estuarine resources used for human consumption shall not be impaired.
Temperature	Shall meet the objective specified in the SWRCB's Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan).
Toxic Substances	Shall not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota shall not adversely affect beneficial uses.
Turbidity	Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%. Where natural turbidity is between 50 and 100 NTU, increases shall not exceed 10 NTU. Where natural turbidity is greater than 100 NTU, increases shall not exceed 10%.

Source: *Water Quality Control Plan, Santa Ana River Basin* (Santa Ana RWQCB 1995; updated February 2016).

mg/L = milligrams per liter

mL = milliliter

MPN = most probable number

NTU = nephelometric turbidity units

pH = percentage of hydrogen

REC1 = water contact recreation

RWQCB = Regional Water Quality Control Board

SHEL = shellfish harvesting

WARM = Warm Freshwater Habitat

Table 4.10.D: Groundwater Quality Objectives for Groundwater Basins

Constituent	Concentration
Arsenic	Waters with MUN Beneficial Use Designation: Shall not exceed 0.05 mg/L as a result of controllable water quality factors.
Bacteria, Coliform	Waters with MUN Beneficial Use Designation: Total coliform numbers shall not exceed 2.2 organisms/100 mL median over any 7-day period as a result of controllable water quality factors.
Barium	Waters with MUN Beneficial Use Designation: Shall not exceed 1.0 mg/L as a result of controllable water quality factors.
Boron	Shall not exceed 0.75 mg/L as a result of controllable water quality factors.
Chloride	Waters with MUN Beneficial Use Designation: Shall not exceed 500 mg/L as a result of controllable factors.
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses.
Cyanide	Waters with MUN Beneficial Use Designation: Shall not exceed 0.2 mg/L as a result of controllable water quality factors.
Fluoride	Waters with MUN Beneficial Use Designation: Shall not exceed 1.0 mg/L as a result of controllable water quality factors.
Hardness	Waters with MUN Beneficial Use Designation: Shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.
Metals	Waters with MUN Beneficial Use Designation: Shall not exceed the following: Cadmium 0.01 mg/L; Chromium 0.05 mg/L; Cobalt 0.2 mg/L; Copper 1.0 mg/L; Iron 0.3 mg/L; Lead 0.05 mg/L; Manganese 0.05 mg/L; Mercury 0.002 mg/L; Selenium 0.01 mg/L; and Silver 0.05 mg/L, as a result of controllable water quality factors.
Methylene Blue-Activated Substances	Waters with MUN Beneficial Use Designation: Shall not exceed 0.05 mg/L as a result of controllable water quality factors.
Oil and Grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that cause a nuisance or adversely affect beneficial uses.
pH	Shall not be raised above 9 or depressed below 6 as a result of controllable water quality factors.
Radioactivity	Waters with MUN Beneficial Use Designation: Shall not exceed the California Code of Regulations, Title 22, standards of 5 pCi/L for combined radium-226 and radium-228, 15 pCi/L for gross alpha particle activity, 20,000 pCi/L for tritium, 8 pCi/L for strontium-90, 50 pCi/L for gross beta particle activity, and 20 pCi/L for uranium.
Sodium	Waters with AGR Beneficial Use Designation: Shall not exceed a sodium absorption rate of 9. Waters with MUN Beneficial Use Designation: Shall not exceed 180 mg/L as a result of controllable water quality factors.
Sulfate	Waters with MUN Beneficial Use Designation: Shall not exceed 500 mg/L as a result of controllable water quality factors.
Taste and Odor	Shall not contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses.
Toxic Substances	All waters shall be maintained free of substances in concentrations that are toxic or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Source: *Water Quality Control Plan, Santa Ana River Basin* (Santa Ana RWQCB 1995, last updated February 2016).

AGR = agricultural supply
MUN = municipal supply
mg/L = milligrams per liter
mL = milliliter
pCi/L = picocuries per liter
pH = percentage of hydrogen

There are no site-specific water quality objectives for Serrano Creek, Upper Newport Bay, or Lower Newport Bay.

The site-specific water quality objectives for the Irvine Groundwater Management Zone are:

- **Total Dissolved Solids:** 910 mg/L
- **Nitrate as Nitrogen:** 3.4 mg/L

Orange County National Pollutant Discharge Elimination System Permit. The City is a Permittee of the *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County* (North Orange County MS4 Permit), Order R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062. The North Orange County MS4 Permit regulates discharges into the MS4 system in the cities and county areas within Orange County that are in the Santa Ana Region. As discussed further below, the North Orange County MS4 Permit requires preparation of a Water Quality Management Plan (WQMP) and implementation of post-construction BMPs for new development and significant redevelopment projects that qualify as Priority Projects.

The proposed Project is considered a Priority Project under the following categories specified in the North Orange County MS4 Permit:

- **Priority Project, Category 1:** New development projects that create 10,000 square feet (sf) or more of impervious surface. This category includes commercial, industrial, residential housing subdivisions, mixed-use, and public projects on private or public property that fall under the planning and building authority or the Permittees.
- **Priority Project, Category 5:** Impervious surface of 2,500 sf or more located within, directly adjacent to (within 200 ft), or discharging directly into receiving waters within ESAs.
- **Priority Project, Category 7:** Streets, roads, highways, and freeways. This category includes any paved surface that is 5,000 sf or greater and used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Drainage Area Management Program. The Drainage Area Management Plan (DAMP) was created by the County of Orange, the OCFCD, and incorporated cities (permittees), and includes specific water pollutant requirements of the North Orange County Stormwater Program. The DAMP is the principal guidance and compliance document for the county-wide implementation of the Stormwater Program. It is the foundation for the permittees to implement model programs designed to prevent pollutants from entering receiving waters to the maximum extent practicable. Section 7 of the DAMP discusses issues relating to new developments and significant redevelopments.

Local Implementation Plan. The City Local Implementation Plan (LIP) is the principal guidance and compliance document specific to the City's jurisdiction for compliance with the requirements of the

North Orange County MS4 Permit. The LIP provides the description and details of the City's water quality program implementation activities. The LIP is designed to work in conjunction with the Orange County DAMP. It should be noted that the Lake Forest LIP takes precedence over DAMP requirements.

Model Water Quality Management Plan. The *Model Water Quality Management Plan* (County of Orange 2011) was developed to aid Orange County, the OCFCD, the cities in Orange County (permittees), and developers in Orange County to address post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects that qualify as Priority Projects. The proposed Project is categorized as street, road, highway, and freeway of 5,000 sf or more of paved surface and, thus, is considered a Priority Project.

Priority Projects are required to develop a Project WQMP to minimize adverse impacts of development to on-site hydrology, volume and rate of runoff, and pollutants of concern. Project WQMPs include project-specific BMPs to minimize these effects (e.g., Low Impact Development [LID], site design measures, source control BMPs). The requirements identified in the Project WQMPs are subject to Section 7 of the DAMP.

According to the North Orange County MS4 Permit, all street and road construction of 10,000 sf or more of paved surface or street, road, highway, and freeway of 5,000 sf or more of paved surface must also comply with the EPA guidance *Managing Wet Weather with Green Infrastructure Municipal Handbook: Green Streets* (December 2008 EPA-833-F-08-009) to the maximum extent practicable.

Technical Guidance Document. The County of Orange developed the Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs) (TGD) (County of Orange 2013) in cooperation with the incorporated cities of Orange County to aid agency staff and project proponents with addressing post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects in Orange County. The TGD serves as a technical guidance to complete the Project WQMP.

Orange County Construction Runoff Guidance Manual. The *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* (County of Orange 2012a) presents the requirements related to construction from the DAMP. The goal of this Guidance Manual is to control pollutant discharges from construction sites. As such, it helps applicants with building and grading permits to understand the water quality requirements during the construction phase of development projects.

Groundwater Dewatering Permit. The Santa Ana RWQCB requires a permit for discharging wastes to surface waters from activities involving groundwater extraction. There are two Orders that apply to groundwater discharges to surface waters in the Newport Bay/San Diego Creek Watershed. The *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality* (Order No. R8-2009-0003, NPDES No. CAG998001) covers general waste discharge requirements for discharges to surface waters that pose an insignificant (de minimus) threat to water quality within the Santa Ana Region. This Order is applicable if it can be

demonstrated that the groundwater being discharged to surface waters does not contain pollutants of concern (selenium and nitrates) in the discharge. However, if groundwater is found to contain petroleum hydrocarbons, solvents, metals and/or salts, the project would be subject to the *General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites Within the San Diego Creek/Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts* (Order No. R8-2007-0041, NPDES No. CAG918002, as amended by ~~R8-2007-0041~~ R8-2009-0045).¹ This Order covers general discharge permits for discharges to surface waters of groundwater resulting from groundwater dewatering operations and/or groundwater cleanup activities at sites within the San Diego Creek/Newport Bay Watershed polluted by petroleum hydrocarbons, solvents, metals and/or salts, or nutrients, selenium, and other pollutants of TMDL concern. Under both Orders, permittees are required to monitor their discharges of groundwater extraction waste from construction to ensure that effluent limitations for constituents are not exceeded.

4.10.3.4 Local Regulations

City of Lake Forest General Plan. The Recreation and Resources Element of the City of Lake Forest General Plan includes a water quality plan that specifies that all new development projects and substantial rehabilitation projects will be required to incorporate BMPs as identified in the County DAMP and City LIP.

The Safety and Noise Element of the City of Lake Forest General Plan includes mapping of flood-prone areas. This Element also specifies that the City will control development in the floodway and floodway fringe. Development in the flood-prone areas are subject to requirements specified by the City.

City of Lake Forest Municipal Code Chapter 8.30. Chapter 8.30 of the City's Municipal Code regulates grading and excavation activities.

- **Section 8.30.150** specifies that grading activities be undertaken in compliance with NPDES and City requirements. Each grading project shall implement BMPs to ensure that discharges of pollutants are effectively prohibited and will not cause or contribute to an exceedance of water quality standards. Section 8.30.150 also specifies that, prior to the issuance by the City of a grading permit, the Department of Public Works and/or Development Services Department shall review the project plans.
- **Section 8.30.152** specifies that projects with a grading permit shall submit an erosion control plan to the Director of the City of Lake Forest Public Works Department, or designee, for approval by September 15th of each year.
- **Section 8.30.154** specifies required maintenance of erosion control and sediment control BMPs after rainstorms for projects with a grading permit.

¹ Order No R8-2007-0041 is anticipated to be replaced in December 2019 by Order No. R8-2019-0061, which is currently under review by the United States Environmental Protection Agency.

City of Lake Forest Municipal Code Chapter 15.14. Chapter 15.14 of the City's Municipal Code regulates stormwater quality and prohibits discharges of pollutants into surface waters unless the discharge is authorized by an NPDES permit.

- **Section 15.14.040** requires that all new development and redevelopment projects comply with the requirements of the North Orange County MS4 Permit. Section 15.14.040 specifies that, prior to the issuance of a grading permit or building permit, the Department of Public Works and/or Development Services Department shall review the project plans.
- **Section 15.14.050** requires preparation of an erosion and sediment control plan as a condition of approval for issuance of a construction or grading permit. Section 15.14.050 also requires implementation of construction BMPs to ensure that the discharge of pollutants from the site will be effectively prohibited and will not cause or contribute to an exceedance of water quality standards. Section 15.14.050 specified that construction and grading activities be undertaken in compliance with NPDES and City requirements.
- **Section 15.14.060** requires implementation of operational BMPs on all sites that have the potential to discharge a pollutant to the City's MS4.

4.10.4 Methodology

Project impacts to hydrology and water quality are evaluated based on the proposed Project's adherence to local, regional, State, and federal standards; the proposed land uses and project design; changes in pre- and post-project stormwater flows; and proposed BMPs for control of surface runoff and reduction of pollutants in stormwater runoff.

4.10.5 Thresholds of Significance

The thresholds for hydrology and water quality impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the *City of Lake Forest CEQA Significance Thresholds Guide* (2009). The proposed Project may be deemed to have a significant impact with respect to hydrology and water quality if it would:

Threshold 4.10.1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Threshold 4.10.2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Threshold 4.10.3: 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 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 storm water drainage systems or provide substantial additional sources of polluted runoff; or**
- iv. **Impede or redirect flood flows.**

Threshold 4.10.4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Threshold 4.10.5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Threshold 4.10.6: Deposit sediment and debris materials within existing channels obstructing flows.

Threshold 4.10.7: Exceed the capacity of a channel and cause overflow during design storm conditions.

Threshold 4.10.8: Adversely change the rate, direction or flow of groundwater.

Threshold 4.10.9: Cause a significant alteration of receiving water quality during or following construction.

Threshold 4.10.10: Substantially degrade water quality by discharge which affects the beneficial uses (i.e., swimming, fishing, etc.) of the receiving or downstream waters

Threshold 4.10.11: Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list

The IS/NOP, included as Appendix A, substantiates that there would be no impacts associated with inundation from tsunami or seiche. In addition, the IS/NOP substantiates that impacts associated with inundation from flooding or impeding or redirecting flood flows would be less than significant. Therefore Thresholds 4.10.3(iv) and 4.10.4 will not be addressed in the following analysis.

4.10.6 Project Impacts

Threshold 4.10.1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

AND

Threshold 4.10.9: Would the project cause a significant alteration of receiving water quality during or following construction?

Less than Significant Impact.

Construction. The proposed Project consists of the development of the 122 ac Project site as a master planned community with single-family residential, affordable housing units for senior citizens, an elementary school, parks and open space, and an internal circulation system. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction, approximately 120 ac of soil would be disturbed (Serrano Creek accounts for 2 ac of the 122 ac site and would not be disturbed). During soil-disturbing construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters (primarily Serrano Creek, which is the closest receiving water downstream of the Project site). Sediment from increased soil erosion and chemicals from spills and leaks have the potential to be discharged to downstream receiving waters during storm events, which can affect water quality and impair beneficial uses.

Because construction of the proposed Project would disturb greater than 1 ac of soil, the proposed Project is subject to the requirements of the Construction General Permit, as specified in Regulatory Compliance Measure (RCM) WQ-1. As also specified in RCM WQ-1, a SWPPP would be prepared and construction BMPs detailed in the SWPPP would be implemented during construction, in compliance with the requirements of the Construction General Permit. In addition, as specified in RCM WQ-2, an Erosion and Sediment Control Plan would be prepared and submitted to the City's Public Works Department prior to issuance of a grading or building permit in compliance with the City Municipal Code. An Erosion and Sediment Control Plan would also be prepared annually during construction and submitted to the City's Public Works Department for approval prior to September 15 of each year. The SWPPP and Erosion and Sediment Control Plans would detail the BMPs to be implemented during construction. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site, and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Compliance with the requirements of the Construction General Permit and City Municipal Code, including incorporation of construction BMPs to target and reduce pollutants of concern in stormwater runoff, would ensure that construction impacts related to Waste Discharge Requirements (WDRs), water quality standards, degradation of water quality, and alteration of receiving water quality would be less than significant.

According to the *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical 2017) and the *Preliminary Geotechnical Exploration* (NMG Geotechnical, Inc. 2018) that were prepared for the proposed Project, groundwater is present within the alluvium beneath the Project site. The groundwater encountered during the geotechnical evaluation ranged from 20 to 45 ft bgs. Based on maps published by the State of California, the historic high groundwater levels at the site ranged from 15 to 20 ft bgs. Because groundwater levels fluctuate

seasonally, excavation for installation of some project features during certain times of the year (e.g., underground utilities, storm drains, and detention vaults) have a potential to encounter groundwater. In the event that excavation extends to depths where groundwater is present, groundwater dewatering would be required. Groundwater may contain high levels of total dissolved solids, nitrate, sediment, selenium, or other constituents, or high or low pH levels that could be introduced to surface waters when dewatered groundwater is discharged to surface waters. Depending on the water quality of the discharge, groundwater dewatering activities during excavation would be conducted in accordance with either the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality* (Order No. R8-2009-0003, NPDES No. CAG998001) or the *General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites Within the San Diego Creek/Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts* (Order No. R8-2007-0041, NPDES No. CAG918002, as amended by ~~R8-2007-0041~~ R8-2009-0045) as specified in RCM WQ-5. Both permits would require testing and treatment (as necessary) of groundwater encountered during groundwater dewatering prior to release to surface waters. As a result, groundwater dewatering would not introduce pollutants to receiving waters at levels that would violate water quality standards or WDRs, degrade water quality, or alter the quality of the receiving water. Impacts to surface water quality from groundwater dewatering would be less than significant.

Although groundwater dewatering may be required, dewatered groundwater would be discharged to the storm drain system, which discharges to Serrano Creek, rather than back into groundwater and therefore would not introduce pollutants to groundwater. Infiltration of stormwater has the potential to affect groundwater quality in areas of shallow groundwater. However, according to the *Preliminary/Conceptual Water Quality Management Plan* (Hunsaker & Associates 2019b) prepared for the proposed Project, the majority of on-site soils are not favorable for infiltration. The northern central portion of the Project site, near the proposed school site, is the only location with potentially favorable soils for infiltration. Because the majority of the soils on the Project site are not favorable for infiltration, any infiltration during construction would be minimal. Additionally, as discussed above, groundwater could occur at depths from 15 to 20 ft bgs. Pollutants in stormwater are generally removed by soil through absorption as water infiltrates. In areas of deep groundwater, there is more absorption potential and, as a result, less potential for pollutants to reach groundwater. As such, due to the depth to groundwater, it is not expected that any stormwater that may infiltrate during construction would affect groundwater quality because there is not a direct path for pollutants to reach groundwater. Therefore, project construction activities would not substantially degrade groundwater quality.

In conclusion, construction of the proposed Project would comply with existing NPDES regulations (as specified in RCM WQ-1, RCM WQ-2, and RCM WQ-5), which include preparation of a SWPPP and Erosion and Sediment Control Plans and implementation of Construction BMPs to target and reduce pollutants of concern in stormwater runoff, and testing and treatment (if required) of any groundwater prior to discharge to surface waters. Compliance with regulatory requirements would ensure that impacts related to violation of any water quality standards or

waste discharge requirements, degradation of surface or ground water quality, and alteration of receiving water quality during construction would be less than significant, and no mitigation is required.

Operation. Expected pollutants of concern from long-term operation of the proposed Project include suspended solids/sediment, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, toxic organic compounds, and trash and debris. According to the *Preliminary/Conceptual Water Quality Management Plan* (Hunsaker & Associates 2019b), potential sources of these pollutants include the following:

- **Suspended Solids/Sediment:** Disturbed or unstabilized landscaping areas and disturbed earth surfaces
- **Nutrients:** Fertilizers, sediment, and trash/debris.
- **Heavy Metals and Toxic Organic Compounds:** Automobiles and uncovered parking areas
- **Pathogens (Bacteria/Virus):** Food wastes, pet wastes, sediment and landscaping areas
- **Pesticides:** Landscaping and open space areas
- **Oil and Grease:** Streets and parked vehicles
- **Trash and Debris:** Landscaping activities, food wrappers and food wastes

The project would be required to comply with the requirements of the North Orange County MS4 Permit and associated guidance documents. The North Orange County MS4 Permit requires that a WQMP be prepared for priority new development and redevelopment projects. WQMPs specify the Site Design, Source Control, LID, and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in stormwater runoff. Site Design BMPs are stormwater management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a project site. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into stormwater. LID BMPs mimic a project site's natural hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious storm drains. Treatment Control BMPs are structural BMPs designed to treat and reduce pollutants in stormwater runoff prior to releasing it to receiving waters. The proposed BMPs would improve water quality compared to the existing nursery, which is currently untreated.

A *Preliminary/Conceptual Water Quality Management Plan* (Hunsaker & Associates 2019b) prepared for the project specifies the Source Control, Site Design, and LID BMPs proposed for the Project (no Treatment Control BMPs are proposed). The *Preliminary/Conceptual Water Quality Management Plan* will be refined during final design based on the final site plans, as specified in RCM WQ-3. The proposed Project BMPs are detailed below.

Proposed Site Design BMPs include minimize impervious area; maximize natural infiltration capacity; preserve existing drainage patterns and time of concentration; disconnect impervious

areas; protect existing vegetation and sensitive areas, and revegetate disturbed areas; and revegetate disturbed areas and xeriscape landscaping.

Proposed Non-Structural Source Control BMPs include education for property owners, tenants and occupants; activity restrictions; common area landscape management; BMP maintenance; common area litter control; employee training; housekeeping of loading docks; common area catch basin inspections; and street sweeping public streets and parking lots.

Proposed Structural Source Control BMPs include storm drain system stenciling and signage; trash and waste storage areas; use of efficient irrigation systems and landscape design, water conservation, smart controllers, and source control; energy dissipation and protection of slopes and channels; dock areas; and wash water control for food preparation areas.

Please refer to the *Preliminary/Conceptual Water Quality Management Plan* included in Appendix I for additional details of the proposed Site Design BMPs, Non-Structural Source Control BMPs, and Structural Source Control BMPs.

The proposed LID BMPs include several categories of BMPs: Hydrologic Source Controls, Infiltration BMPs, Biotreatment BMPs, and Hydromodification BMPs. The proposed Hydrologic Source Controls include impervious surface area dispersion (e.g., rooftop disconnections) and street trees (canopy interception). In addition, trees would be planted along the parkways and within common lot areas.

Proposed Infiltration BMPs and Biotreatment BMPs include bioretention without underdrains and subsurface infiltration galleries. Specifically, the proposed Project would include a subsurface detention vault below Central Park, underground detention vaults in combination with proprietary biotreatment BMPs at each of the five neighborhood parks, a bioretention facility along Serrano Creek, and a linear bioretention facility along "A" Street. Because the northern portion of the Project site is the only area with potentially favorable soils for infiltration, the detention facility at the neighborhood park near the proposed school may be changed to an infiltration BMP during final design if the soils at this location are determined to be favorable for infiltration. The detention vault below Central Park is also classified as a Hydromodification BMP, which would meet the North Orange County MS4 Permit requirements for hydromodification. Because the underground detention vaults would be sized to meet the North Orange County MS4 Permit hydromodification requirements (i.e., stormwater discharge from the Project site would not exceed pre-development runoff rates or time of concentration by more than 5 percent), hydromodification impacts in Serrano Creek (e.g., erosion, sedimentation, channel instability) would not occur. Refer to Figure 4.10.1 for the proposed locations of the BMPs.

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LEGEND

- PROJECT LIMITS
- NOT A PART
- DRAINAGE MANAGEMENT AREA (DMA) LIMITS
- DMA DESIGNATION AND ACREAGE
- GENERAL FLOW DIRECTION (ONSITE)
- GENERAL FLOW DIRECTION (OFFSITE)
- PROJECT STORM DRAIN SYSTEM
- LOW FLOW DRAINAGE SYSTEM
- EXISTING/OFFSITE STORM DRAIN SYSTEM
- UNDERGROUND BIORETENTION FACILITY WITH UNDERDRAINS
- BIORETENTION FACILITY WITH UNDERDRAINS (BIO-1)
- PARKWAY LINEAR BIORETENTION FACILITY WITH UNDERDRAINS (BIO-1)
- PARK AREA UNDERGROUND BIORETENTION FACILITY WITH UNDERDRAINS AND PROPRIETARY BIOTREATMENT (BIO-7)
- PARK AREA
- PROJECT PHASE AREA (ALL INTERNAL STREETS PRIVATE)
- DISCHARGE POINT
- DIVERSION STRUCTURE
- UNDERGROUND DETENTION

LSA

FIGURE 4.10.1



0 200 400
FEET

SOURCE: Hunsaker & Associates

I:\CLF1801\G\Stormwater BMPs.cdr (6/26/2019)

Nakase Nursery/Toll Brothers
Proposed Stormwater Best Management Practices (BMPs)

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The proposed BMPs would target and reduce pollutants of concern from runoff from the Project site in compliance with the North Orange County MS4 Permit requirements. Compliance with the requirements of the North Orange County MS4 Permit, including incorporation of operational BMPs to target pollutants of concern, would ensure that water quality impacts, degradation of water quality, and alteration of receiving water quality during Project operation would be less than significant.

As discussed previously, infiltration of stormwater could have the potential to affect groundwater quality in areas of shallow groundwater. However, any infiltration would be minimal due to the low infiltration potential of the majority of on-site soils. The only potential location for an infiltration BMP is the neighborhood park near the proposed school (if the soils at this location are determined to be favorable for infiltration). Due to the depth to groundwater, it is not expected that any stormwater that may infiltrate during operation would affect groundwater quality because there is no direct path for pollutants to reach groundwater. In addition, the proposed Project would be required to implement LID features to treat stormwater before it could reach groundwater. Therefore, project operation would not substantially degrade groundwater quality.

In conclusion, construction of the proposed Project would comply with existing NPDES regulations (as specified in RCM WQ-3), which includes preparation of a Final WQMP and implementation of operational BMPs to target and reduce pollutants of concern in stormwater runoff from the Project site. Compliance with regulatory requirements would ensure that impacts related to violation of any water quality standards or WDRs, degradation of surface water or groundwater quality, and alteration of receiving water quality during Project operation would be less than significant, and no mitigation is required.

Threshold 4.10.2: Would the project 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.

Construction. According to the *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical Inc. 2017) and the *Preliminary Geotechnical Exploration* (NMG Geotechnical, Inc. 2018) that were prepared for the Project, groundwater encountered during the geotechnical evaluation ranged from 20 to 45 ft bgs, and the historic high groundwater levels at the Project site ranged from 15 to 20 ft bgs. Because groundwater levels fluctuate seasonally, excavation for installation of some project features (e.g., underground utilities, storm drains, and detention vaults) has a potential to encounter groundwater, and groundwater dewatering may be required. However, groundwater dewatering would be localized and temporary, and the volume of groundwater removed would not be substantial. In addition, any volume of water removed during groundwater dewatering would be minimal compared to the size of the Coastal Plain of the Orange County Groundwater Basin, which has a surface area of 350 sq mi and a storage capacity of 38,000,000 acre-feet (af) (California DWR 2004). Groundwater dewatering would not interfere with the sustainable management of the groundwater basin because the groundwater basin has been sustainably managed over the last

10 years and will continue to be sustainably managed (refer to response to Threshold 4.10.5 for additional discussion on sustainable groundwater management). Therefore, construction impacts related to a decrease in groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be less than significant, and no mitigation is required.

Operation. Development of the proposed Project would increase impervious surface area by approximately 68.2 ac, which would decrease on-site infiltration. In addition, according to the *Preliminary/Conceptual Water Quality Management Plan* (Hunsaker & Associates 2019b) prepared for the Project, the majority of the soils on the Project site are not favorable for infiltration; therefore, existing on-site infiltration would be minimal. Therefore, the additional impervious surface areas would not substantially decrease infiltration compared to existing conditions. Additionally, any decrease in infiltration would be minimal in comparison to the size of the Orange County Groundwater Basin. Furthermore, neither groundwater extraction nor injection would occur during operation. For these reasons, impacts related to depletion of groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be less than significant, and no mitigation would be required.

Threshold 4.10.3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

Less than Significant Impact.

Construction. During Project construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. Project construction would not disturb Serrano Creek because the proposed Project does not include physical improvements to the creek. As discussed above in response to Thresholds 4.10.1 and 4.10.9, the Construction General Permit requires preparation of a SWPPP (RCM WQ-1) and the City of Lake Forest Municipal Code requires preparation of erosion and sediment control plans (RCM WQ-2). The SWPPP and erosion and sediment control plans would detail Erosion Control and Sediment Control BMPs to be implemented during project construction to minimize erosion and retain sediment on site. With compliance with the requirements of the Construction General Permit and City Municipal Code and with implementation of the construction BMPs, construction impacts related to on- or off-site erosion or siltation would be less than significant, and no mitigation is required.

Operation. In the proposed condition, 80.3 ac (65.8 percent) of the Project site would be impervious surface area and not prone to on-site erosion or siltation because no soil would be included in these areas. The remaining 41.7 ac (41.7 percent) of the site would consist of pervious surface area, which would contain landscaping that would minimize on-site erosion

and siltation by stabilizing the soil. Therefore, on-site erosion and siltation impacts would be minimal. However, the proposed Project would increase impervious area on the Project site by 68.2 ac, which would result in a net increase in stormwater runoff that can lead to downstream erosion in receiving waters (Serrano Creek). Serrano Creek is susceptible to hydromodification.¹ However, as specified in RCM WQ-3, the proposed Project would be required to comply with the hydromodification requirements of the North Orange County MS4 Permit and reduce stormwater runoff from the Project site so it does not exceed pre-development runoff rates or time of concentration by more than 5 percent. To achieve this, the proposed Project would include a subsurface detention vault below Central Park, underground detention vaults in combination with proprietary biotreatment BMPs at each of the five neighborhood parks, a bioretention facility along Serrano Creek, and a linear bioretention facility along "A" Street. These features will reduce flows during storm events so it does not exceed pre-development runoff rates or time of concentration by more than 5 percent. Additionally, as detailed in the *Preliminary Hydrology Analysis* (Hunsaker & Associates 2019a), the proposed detention systems would reduce peak flow from the Project site for the 2-year, 25-year, and 100-year storm events compared to existing conditions. As specified in RCM WQ-4, a Final Hydrology Study would be required to be prepared and submitted to the City for approval. The Final Hydrology Study would also be required to demonstrate that the final design of the Project meets the hydromodification requirements and that, with implementation of detention facilities, the peak flow of stormwater runoff in the proposed condition would be less than existing conditions. Because the stormwater runoff from the Project site would not exceed the North Orange County MS4 Permit hydromodification requirements (i.e., would not exceed pre-development runoff rates or time of concentration by more than 5 percent), an analysis of flooding impacts and erosion and slope stability within Serrano Creek is not required. Compliance with the hydromodification requirements of the North Orange County MS4 Permit, as specified in RCM WQ-3 and RCM WQ-4, would ensure that the proposed Project would not increase downstream erosion or siltation impacts. For these reasons, operation impacts related to substantial on- or off-site erosion or siltation would be less than significant, and no mitigation is required.

Threshold 4.10.3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- ii. **Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?**

Less than Significant Impact.

Construction. As discussed in response to Thresholds 4.10.1 and 4.10.9, Project construction would comply with the requirements of the Construction General Permit and would include the preparation and implementation of a SWPPP. The SWPPP would include construction BMPs to

¹ Hydromodification is the alteration of the hydrologic characteristics of water bodies. Increased stream flows and changes in sediment transport caused by increased impervious areas from urbanization or other land use changes can result in increased stream flows, erosion, and changes in sediment transport.

control and direct on-site surface runoff and would include detention facilities, if required to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. With implementation of BMPs, construction impacts related to a substantial increase in the rate or amount of surface runoff that would result in flooding would be less than significant, and no mitigation is required.

Operation. In the existing condition, on-site drainage is divided into two drainages. Drainage Area “A” consists of the western/northwestern portion of the Project site (approximately 76.6 ac). Stormwater runoff in Drainage Area “A” flows through an on-site natural and partly paved drainage system that connects to an existing 10.5 x 10.5 ft reinforced concrete box and the existing storm drain system (OCFCD Facility No. F19-P07), located along the southwest Project site boundary. This existing storm drain system discharges into Serrano Creek approximately 0.6 mi to the southwest of the Project site. Run-on to Drainage Area “A” consists of runoff from off-site areas (approximately 227.9 ac) to the north of the Project site that discharge into the Project site via an existing 84-inch reinforced concrete pipe at Rancho Parkway and Corridor Center.

Drainage Area “B” consists of the eastern/southeastern portion of the Project site (approximately 43.4 ac). Stormwater runoff within Drainage Area “B” channelizes in an on-site natural and partly paved drainage prior to discharging to OCFCD Facility No. F19, which discharges to Serrano Creek and is located along the southern corner of the Project site. There is no off-site run-on to Drainage Area “B”.

The proposed Project would alter the on-site drainage patterns. In the proposed condition, Drainage Area “A” and a majority of Drainage Area “B” would be combined into one drainage area of 111.9 ac. As a result, stormwater runoff from the majority of the Project site would flow into a proposed on-site storm drain system in “B” Street and then would be diverted to the subsurface detention vault below Central Park. Flows would then be directed to the southwestern portion of the Project site to the existing 10.5 x 10.5 ft reinforced concrete box, then to the existing off-site storm drain system (i.e., OCFCD Facility No. F19-P07), and ultimately into Serrano Creek approximately 0.6 mi to the southeast of the Project site. Off-site stormwater runoff from north of Rancho Parkway would be connected to the proposed on-site storm drain system in “B” Street via the existing 84-inch storm drain system in Rancho Parkway, which would then connect to the same existing 10.5 x 10.5 ft reinforced concrete box as the on-site stormwater runoff at the southwestern portion of the Project site. Runoff from the remaining 7.3 ac of the southern portion of the Project site would continue to flow to Serrano Creek via OCFCD Facility No. F19, which is located at the southern corner of the Project site.

The proposed Project would reduce the tributary area to OCFCD Facility No. F19 from 43.4 acres to 7.3 acres. As a result, as detailed in the *Preliminary Hydrology Analysis* (Hunsaker & Associates, June 2019), flow to Serrano Creek at via OCFCD Facility No. F19 would be reduced from 82.2 cfs to 12.2 cfs during a 100-year storm event.

The proposed Project would increase the on-site tributary area to OCFCD Facility No. F19-P07, from 76.6 ac to 111.9 ac. The increased impervious surface area on the Project site would

increase stormwater runoff generated on the Project site and discharged to OCFCD Facility No. F19-P07 (and ultimately Serrano Creek) without implementation of detention measures. As mentioned previously, in the existing and proposed conditions, discharge to OCFCD Facility No. F19-P07 consists of both on-site and off-site stormwater runoff; therefore, the hydrologic analysis took into consideration the combined on-site and off-site flows to this storm drain facility. As shown in Table 4.10.E, without detention measures, the proposed Project would increase discharge to OCFCD Facility No. F19-P07 by 76.2 cubic feet per second (cfs), 174.8 cfs, and 221.4 cfs for the 2-year, 25-year, and 100-year storm events, respectively. However, the proposed detention vault below Central Park would be designed to reduce stormwater discharge to below existing conditions. With the proposed underground detention vault, stormwater flows would be reduced by 6.4 cfs, 139.7 cfs, and 217.3 cfs for the 2-year, 25-year, and 100-year storm events, respectively, compared to existing conditions. Because stormwater runoff from the Project site would be reduced to less than existing conditions at both discharge points (OCFCD Facility Nos. F19 and F19-P07), the proposed Project would not result in off-site flooding. Additionally, the proposed on-site storm drain systems, detention systems, and stormwater BMPs would be sized to collect and convey stormwater runoff on the Project site so that on-site flooding would not occur.

Table 4.10.E: Existing and Proposed Stormwater Discharge to OCFCD Facility No. F19-P07

Scenario	Area (acres)	2-Year Storm Event (cfs)	25-Year Storm Event (cfs)	100-Year Storm Event (cfs)
Existing Runoff from On- and Off-Site Areas	304.5	208.6	508.7	671.2
Proposed Runoff from On- and Off-Site Areas without Detention Measures	339.8	284.8	683.5	892.6
Proposed Runoff from On- and Off-Site Areas with Detention Measures	339.8	202.2	369.0	453.9
Change from Existing Without Detention Measures	-	+76.2	+174.8	+221.4
Change from Existing with Detention Measures	-	-6.4	-139.7	-217.3

Source: *Preliminary Hydrology Analysis* (Hunsaker & Associates 2019a).

cfs = cubic feet per second

OCFCD = Orange County Flood Control District

As specified in RCM WQ-4, a Final Hydrology Study would be required to be prepared and submitted to the City and County for approval. The Final Hydrology Study would also be required to confirm that the final design of the Project meets the hydromodification requirements, that peak flow of stormwater runoff in the proposed condition would be less than existing conditions with implementation of detention facilities, and that the on-site detention facilities are appropriately sized to accommodate stormwater runoff from the design storm. As demonstrated in the *Preliminary Hydrology Analysis* (Hunsaker & Associates 2019a) and to be subsequently confirmed in the Final Hydrology Study, impacts related to an increase in the rate or amount of surface runoff in a manner that would result in on- or off-site flooding would be less than significant, and no mitigation is required.

Threshold 4.10.3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- iii. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?**

AND

Threshold 4.10.7: Would the project exceed the capacity of a channel and cause overflow during design storm conditions?

Less than Significant Impact.

Construction. As discussed above in response to Thresholds 4.10.1 and 4.10.9, construction of the proposed Project has the potential to introduce pollutants to the storm drain system from erosion, siltation, and accidental spills. However, as specified in RCM WQ-1 and RCM WQ-2, the Construction General Permit requires preparation of a SWPPP, and the City of Lake Forest Municipal Code requires preparation of erosion and sediment control plans. Both the SWPPP and erosion and sediment control plans would identify construction BMPs to be implemented during construction to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, and spills. In addition, any groundwater extracted during groundwater dewatering activities that is discharged to surface waters would be tested and treated (if necessary) to ensure that any discharges meet the water quality limits specified in the applicable NPDES permit (as specified in RCM WQ-5). RCM WQ-1, RCM WQ-2, and RCM WQ-5 are existing NPDES requirements with which the Project is required to comply. These measures would prevent substantial additional sources of polluted runoff being discharged to the storm drain system through implementation of construction BMPs that target pollutants of concern in runoff from the Project site as well as testing and treatment (if required) of groundwater prior to its discharge to surface waters.

Additionally, as discussed above in response to Threshold 4.10.3.ii, the SWPPP would include construction BMPs to control and direct surface runoff on site and would include detention measures if required to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. For these reasons, construction impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required.

Operation. As discussed above in response to Thresholds 4.10.1 and 4.10.9, operation of the Project has the potential to introduce pollutants to the storm drain system from the proposed on-site uses. However, as specified in RCM WQ-3, permanent operational BMPs that target and reduce pollutants of concern in stormwater runoff would be implemented and maintained throughout the life of the Project. RCM WQ-5 is an existing NPDES requirement with which the Project is required to comply. This measure would prevent substantial additional sources of

polluted runoff being discharged to the storm drain system through implementation of operational BMPs to target pollutants of concern in runoff from the Project site. Additionally, as discussed above in response to Threshold 4.10.3.ii, the proposed detention vault below Central Park would reduce stormwater runoff from the Project site to below existing conditions to both downstream storm drain systems (OCFCD Facility Nos. F19 and F19-P07). For these reasons, operational impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required.

Threshold 4.10.5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The Project site is within the jurisdiction of the Santa Ana RWQCB. As discussed in Section 4.10.3.3, Regional Regulations, the Santa Ana RWQCB adopted a Basin Plan that designates beneficial uses for all surface and groundwater within its jurisdiction and establishes the water quality objectives and standards necessary to protect those beneficial uses. As discussed in detail above in response to Thresholds 4.10.1 and 4.10.9, the proposed Project would comply with existing NPDES requirements and would implement construction and operational BMPs to reduce pollutants of concern in stormwater runoff (RCM WQ-1, RCM WQ-2, and RCM WQ-3). Additionally, during construction, any dewatered groundwater would be tested and treated (if necessary) prior to discharge to surface waters (RCM WQ-5). Compliance with these regulatory requirements would ensure that proposed Project would not degrade or alter water quality, cause the receiving waters to exceed the water quality objectives, or impair the beneficial use of receiving waters (refer to response to Threshold 4.10.10 for further discussion of impacts to beneficial uses). As such, the proposed Project would not result in water quality impacts that would conflict with the Santa Ana RWQCB Water Quality Control Plan (Basin Plan). Construction and operational impacts related to a conflict with the Basin Plan would be less than significant, and no mitigation is required.

The SGMA, which was enacted in September 2014, requires governments and water agencies of high- and medium-priority basins to halt overdraft of groundwater basins. The SGMA requires the formation of local groundwater sustainability agencies, which are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. The project site is located within the Coastal Plain of the Orange County Groundwater Basin, which is managed by the Orange County Water District (OCWD). The San Juan Valley Groundwater Basin is identified by the California DWR as a medium priority basin; therefore, OCWD is required to develop a Groundwater Sustainability Plan and bring the groundwater basin into balanced levels of pumping and recharge by 2042. The SGMA established a process for local agencies to develop an alternative in lieu of a Groundwater Sustainability Plan. In compliance with this requirement, OCWD prepared and submitted the *Basin 8-1 Alternative – OCWD Management Area* (OCWD 2017) to the California DWR as an alternative to a Groundwater Sustainability Plan (California DWR 2019). The *Basin 8-1 Alternative – OCWD Management Area* demonstrates that the groundwater basin has been sustainably managed over the last 10 years and will continue to be sustainably managed. As detailed in response to Threshold 4.10.2, any groundwater extracted during groundwater dewatering during construction would be minimal and would not interfere with the sustainable management of the groundwater basin. Additionally, project operation would not require groundwater extraction.

Although the project would increase water use, which may be obtained from groundwater, the Irvine Ranch Water District (IRWD), which supplies municipal water, ensures that sufficient water supplies are available so that groundwater overdraft does not occur. For these reasons, the proposed Project would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Therefore, construction and operational impacts related to conflict with or obstruction of water quality control plans or sustainable groundwater management plans would be less than significant, and no mitigation is required.

Threshold 4.10.6: Would the project deposit sediment and debris materials within existing channels, obstructing flows?

Less than Significant Impact. As discussed above in response to Thresholds 4.10.1 and 4.10.9, construction of the proposed Project has the potential to introduce pollutants to the downstream receiving waters, including sediment from erosion and siltation. However, as specified in RCM WQ-1 and RCM WQ-2, the Construction General Permit requires preparation of a SWPPP, and the City of Lake Forest Municipal Code requires preparation of erosion and sediment control plans. Both the SWPPP and the erosion and sediment control plans would identify construction BMPs to be implemented during construction to reduce impacts to water quality, including those impacts associated with soil erosion and siltation, so that sediment and debris are not discharged into downstream receiving waters. In addition, any groundwater extracted during groundwater dewatering activities that is discharged to surface waters would be tested and treated (if necessary) to ensure that any discharges meet the water quality limits specified in the applicable NPDES permit (as specified in RCM WQ-5) so that sediments and debris are not discharged into downstream surface waters at concentrations that could obstruct channel flow.

As also discussed above in response to Thresholds 4.10.1 and 4.10.9, operation of the Project has the potential to introduce pollutants of concern, including suspended solids/sediment and trash and debris to the storm drain system during operation. However, as specified in RCM WQ-3, permanent operational BMPs would be implemented and maintained throughout the life of the Project. The BMPs would target and reduce pollutants of concern in stormwater runoff, including suspended solids/sediment and trash and debris, so they are not discharged to downstream surface waters at concentrations that could obstruct channel flow.

RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5 are existing NPDES requirements with which the Project is required to comply. These measures would prevent substantial impacts to water quality through implementation of construction and operational BMPs to target pollutants of concern in runoff from the Project site and testing and treatment (if required) of groundwater prior to its discharge to surface waters. The NPDES permits are designed to ensure that Projects do not result in discharges that contain sediment and debris materials in levels that could obstruct flow in downstream receiving waters. Therefore, with compliance with the NPDES requirements, impacts related to sediment deposits and debris materials within existing channels and obstructing flows would be less than significant. No mitigation is required.

Threshold 4.10.8: Would the project adversely change the rate, direction or flow of groundwater?

Less than Significant Impact. As discussed in response to Threshold 4.10.2, groundwater dewatering may be required during excavation. However, groundwater dewatering would be localized and temporary and would not be in quantities that could adversely change the rate, direction, or flow of groundwater due to the size of the groundwater basin and limited dewatering activities. Project operation would not involve extraction or injection of groundwater and there would be no potential for Project operation to adversely change the rate, direction, or flow of groundwater. For these reasons, impacts related to change in the rate, direction, or flow of groundwater would be less than significant and no mitigation is required.

Threshold 4.10.10: Would the project substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters?

Less than Significant Impact. Beneficial uses of surface receiving waters for the Project site are discussed in Section 4.10.3.3, Regional Regulations, and listed in Table 4.10.A. As discussed above in response to Thresholds 4.10.1 and 4.10.9, construction of the proposed Project has the potential to introduce pollutants to the downstream receiving waters from erosion, siltation, and accidental spills. However, as specified in RCM WQ-1 and RCM WQ-2, the Construction General Permit requires preparation of a SWPPP, and the City of Lake Forest Municipal Code requires preparation of erosion and sediment control plans. Both the SWPPP and erosion and sediment control plans would identify construction BMPs to be implemented during construction to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, and spills. In addition, any groundwater extracted during groundwater dewatering activities that is discharged to surface waters would be tested and treated (if necessary) to ensure that any discharges meet the water quality limits specified in the applicable NPDES permit (as specified in RCM WQ-5).

As also discussed above in response to Thresholds 4.10.1 and 4.10.9, operation of the Project has the potential to introduce pollutants to the storm drain system from the proposed on-site uses. However, as specified in RCM WQ-3, permanent operational BMPs that target and reduce pollutants of concern in stormwater runoff would be implemented and maintained throughout the life of the Project.

RCM WQ-1, RCM WQ-2, RCM WQ-3, and RCM WQ-5 are existing NPDES requirements with which the Project is required to comply. These measures would prevent substantial impacts to water quality through implementation of construction and operational BMPs to target pollutants of concern in runoff from the Project site, and testing and treatment (if required) of groundwater prior to its discharge to surface waters. The NPDES permits are designed to ensure that Projects do not result in discharges that contain pollutants in levels that could degrade water quality and degrade beneficial uses. Therefore, with compliance with NPDES requirements, impacts related to the degradation of water quality by discharge that affects the beneficial uses of the receiving or downstream waters would be less than significant. No mitigation is required.

Threshold 4.10.11: Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list?

Less than Significant Impact. As discussed in greater detail in Section 4.10.4, Methodology, the receiving waters for runoff from the Project site are listed as impaired on the 303(d) list for several constituents. Serrano Creek is listed on the 2014/2016 303(d) list as impaired for ammonia, indicator bacteria, pH, benthic community effects, and toxicity. San Diego Creek (Reach 2) is listed as impaired for indicator bacteria, nutrients, sedimentation/siltation, and unknown toxicity. San Diego Creek (Reach 1) is listed as impaired for fecal coliform, selenium, toxaphene, nutrients, pesticides, sedimentation/siltation, benthic community effects, DDT, malathion, and toxicity. Upper Newport Bay is listed as impaired for chlordane, copper, DDT, indicator bacteria, metals, nutrients, PCBs, pesticides, sediment toxicity, sedimentation/siltation, and malathion. Lower Newport Bay is listed as impaired for chlordane, copper, DDT, indicator bacteria, nutrients, PCBs, pesticides, and sediment toxicity.

Construction. Construction of the proposed Project would not contribute to the DDT, PCB, toxaphene, or chlordane impairments because these chemicals have been banned from use in the United States. It is unlikely that insecticides or pesticides would be used during construction, so construction of the Project would not contribute to the malathion or pesticide impairments. However, during construction activities, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and may have the potential to contribute to the ammonia, bacteria, nutrients, toxicity, pH, benthic community effects, copper, metals, and sediment toxicity impairments. Construction activities involve the use of a variety of chemicals and materials.

As discussed above under the response to Thresholds 4.10.1 and 4.10.9, in compliance with the requirements of the Construction General Permit, a SWPPP would be prepared and construction BMPs detailed in the SWPPP would be implemented during construction, as specified in RCM WQ-1. Construction BMPs would include Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Therefore, with implementation of construction BMPs that prevent spills and construction materials from reaching receiving waters, construction of the proposed Project would not contribute to the existing nutrients, toxicity, pH, benthic community effects, copper, metals, and sediment toxicity impairments.

During construction activities, soil disturbance would increase soil erosion and sedimentation, which could contribute to the sedimentation/siltation, benthic community effects, and selenium impairments (if selenium is present on site because selenium is a naturally occurring element in soil and groundwater in the region). In compliance with the requirements of the Construction General Permit, a SWPPP would be prepared and construction BMPs detailed in the SWPPP would be implemented during construction, as specified in RCM WQ-1. In addition, as specified in RCM WQ-2, an erosion and sediment control plan would be prepared and submitted to the City's Public Works Department prior to issuance of a grading or building permit in compliance with the City of Lake Forest Municipal Code. An erosion and sediment control plan would also be prepared annually during construction and submitted to the City's Public Works Department for

approval prior to September 15th of each year during construction. The SWPPP and erosion and sediment control plans would detail the BMPs to be implemented during construction. Construction BMPs would include Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site. With implementation of Erosion Control and Sediment Control BMPs, soil disturbance activities would not have the potential to contribute to the sedimentation/siltation, benthic community effects, and selenium impairments.

As part of the good housekeeping BMPs, construction workers would be provided access to portable toilets. Waste from leaking portable toilets has the potential to contribute to ammonia, bacteria, nutrients, toxicity, pH, benthic community effects, and sediment toxicity impairments. Portable toilets would be located in the on-site staging areas and would be contained to prevent pollutants from being washed into receiving waters in the event of a leak. In addition, disposal of waste from the portable toilets would be performed by contracted waste haulers who would handle, haul away, and dispose of portable toilet waste in accordance with applicable regulations. Therefore, use of portable toilets during construction of the proposed project would not contribute to the ammonia, bacteria, nutrients, toxicity, pH, benthic community effects, and sediment toxicity impairments.

As discussed above under the response to Thresholds 4.10.1 and 4.10.9, groundwater dewatering may be required during construction. Groundwater may contain high levels of total dissolved solids, nitrate, sediment, selenium, or other constituents, or high or low pH levels that could be introduced to surface waters when dewatered groundwater is discharged to surface waters. Groundwater discharged to surface waters could contribute to the nutrients, toxicity, pH, benthic community effects, sedimentation/siltation, selenium, or sediment toxicity impairments. Depending on the water quality of the discharge, groundwater dewatering activities during excavation would be conducted in accordance with either the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality* (Order No. R8-2009-0003, NPDES No. CAG998001) or the *General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites Within the San Diego Creek/Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts* (Order No. R8-2007-0041, NPDES No. CAG918002, as amended by Order No. ~~R8-2007-0041~~ R8-2009-0045), as specified in RCM WQ-5. Both permits would require testing and treatment (as necessary) of groundwater encountered during groundwater dewatering prior to its discharge to surface waters. As a result, groundwater dewatering would not introduce pollutants to receiving waters at levels that contribute to an existing impairment.

In conclusion, construction of the proposed Project would comply with existing NPDES regulations (as specified in RCM WQ-1, RCM WQ-2, and RCM WQ-5), which includes preparation of a SWPPP and erosion and sediment control plans, implementation of construction BMPs to target and reduce pollutants of concern in stormwater runoff, and testing and treatment (if required) of any groundwater prior to its discharge to surface waters. Compliance with regulatory requirements would ensure that discharges of stormwater or groundwater during construction would not contribute to an existing impairment in downstream surface waters. Therefore, impacts related to an increase in any pollutant for which the receiving water body is

already impaired as listed on the CWA Section 303(d) list would be less than significant, and no mitigation is required.

Operation. Expected pollutants of concern from long-term operation of the proposed Project include suspended solids/sediment, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, toxic organic compounds, and trash and debris. DDT, PCBs, toxaphene, or chlordane have been banned from use in the United States and are not a pollutant of concern for the project; therefore, project operation would not contribute to these existing impairments.

Suspended solids can be introduced from on-site disturbed or unstabilized landscaping or disturbed earth surfaces and contribute to the sedimentation/siltation, benthic community effects, and selenium impairments. Sources of nutrients include fertilizers, sediment, and trash/debris, which can contribute to the nutrients' impairment. Potential sources of trash and debris also include landscaping activities, food wrappers, and food waste and could contribute to the nutrients' impairment. Ammonia is used as a household cleaning agent and could contribute to the ammonia impairment if discharged to surface waters. Automobiles and stormwater runoff from streets and uncovered parking areas would contain oil and grease, metals, and toxic organic compounds, and could contribute to the existing copper, metals, benthic community effects, toxicity, and sediment toxicity impairments. Pathogens (bacteria/viruses) could be introduced from food waste, pet waste, sediment, and landscaping areas, and contribute to the existing bacteria impairment.

As discussed above under the response to Thresholds 4.10.1 and 4.10.9, and detailed in the *Preliminary/Conceptual Water Quality Management Plan* (Hunsaker & Associates 2019b), a variety of BMPs is proposed as part of the Project. The purpose of the WQMP is to identify the pollutants of concern for a project and specify the BMPs that would target and reduce the pollutants of concern in stormwater runoff on the Project site. As specified in RCM WQ-3, these BMPs would be implemented during Project operation. With implementation of BMPs during operation, the pollutants of concern described above would be removed by the BMPs to levels that would not contribute to the existing impairments. Therefore, impacts related to an increase in any pollutant for which the receiving water body is already impaired as listed on the CWA Section 303(d) list would be less than significant, and no mitigation is required.

4.10.7 Cumulative Impacts

Cumulative development in the San Diego Creek and Newport Bay Watersheds is a continuation of the existing urban pattern of development that has already resulted in extensive modifications to watercourses in the area. The area's watercourses have been channelized and drainage systems have been put into place to respond to the past urbanization that has occurred in this area. For the cumulative analysis related to hydrology and water quality, the cumulative projects being considered include the related projects discharging to the same watersheds as the proposed Project (i.e., the San Diego Creek and Newport Bay Watersheds). The related projects within the San Diego Creek and Newport Bay Watersheds include Related Projects 1, 2, 6, 7, 8, and 10. (Please refer to Table 4.A and Figure 4.0.1 in Section 4.0, Existing Setting, Environmental Analysis, Impacts, and

Mitigation Measures, for the descriptions and locations of these related projects.) Each of these related projects could potentially increase the volume of stormwater runoff and contribute to pollutant loading in stormwater runoff reaching both the City's storm drain system and the San Diego Creek and Newport Bay Watersheds, thereby resulting in cumulative impacts to hydrology and surface water quality. The remaining related projects are within the Aliso Creek Watershed and are not considered in this analysis because they do not have the potential to contribute to the hydrology- and water quality-related impacts of the proposed Project to result in cumulative impacts.

New development and redevelopment can result in increased stormwater runoff and increased urban pollutants in stormwater runoff from project sites. Each related project must include BMPs to reduce impacts to water quality and hydrology in compliance with local ordinances and plans adopted to comply with requirements of the various NPDES permits. Specifically, all projects that disturb 1 ac or more of soil must comply with the requirements of the Construction General Permit, the North Orange County MS4 Permit, and the City of Lake Forest Municipal Code. The preparation and approval of a SWPPP, erosion and sediment control plans (for construction), and a WQMP (for operation) would be required for each related project to determine appropriate BMPs to minimize water quality impacts. In addition, the preparation and approval of a hydrology study would be required to determine the hydrologic control required to minimize increases in runoff from each site so they do not exceed existing conditions or result in hydromodification impacts. In addition, the City's Public Works Department reviews all development projects on a case-by-case basis to ensure that sufficient local and regional drainage capacity is available.

Each related project must consider impaired receiving waters and TMDLs for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of water bodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/attain the beneficial uses in the Basin Plan. Thus, by complying with TMDLs, a project's contribution to overall water quality improvement in the San Diego/Newport Bay Watershed in the context of the regulatory program is designed to account for cumulative impacts.

Regional programs and BMPs such as TMDL programs and the MS4 Permit Program have been designed under an assumption that the San Diego Creek Watershed and Newport Bay Watershed would continue their pattern of urbanization. The regional control measures contemplate the cumulative effects of proposed development. The proposed Project would be required to comply with the requirements of the Construction General Permit and the North Orange County MS4 Permit and implement construction and operational BMPs to reduce pollutants in stormwater runoff. Compliance with these regional programs and permits constitutes compliance with programs intended to address cumulative water quality impacts. As stated above, each related project would be required to develop a SWPPP, erosion and sediment control plans, a WQMP, and a hydrology study, and would be evaluated individually to determine appropriate BMPs and treatment measures to reduce impacts to surface water quality and hydrology. Because the proposed Project and other related Projects would comply with applicable NPDES requirements and would include BMPs to reduce the volume of stormwater runoff and pollutants of concern in stormwater runoff, the cumulative hydrology and water quality impacts of the proposed Project and the related projects

would be less than significant. Therefore, the proposed Project's incremental hydrology and water quality impacts would not be cumulatively considerable.

4.10.8 Level of Significance Prior to Mitigation

Construction and operational impacts related to hydrology and water quality would be less than significant with implementation of RCM WQ-1 through RCM WQ-5.

4.10.9 Regulatory Compliance Measures and Mitigation Measures

4.10.9.1 Regulatory Compliance Measures

The following RCMs are existing regulations that are applicable to the proposed Project and are considered in the analysis of potential impacts related to hydrology and water quality. The City of Lake Forest considers these requirements to be mandatory; therefore, they are not mitigation measures.

RCM WQ-1 Construction General Permit. Prior to commencement of construction activities, the Applicant shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)*, NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Stormwater Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the project from the SMARTS and provided to the Director of the City of Lake Forest Public Works Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including but not limited to, preparation of a SWPPP and implementation of construction site Best Management Practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in stormwater runoff. Construction Site BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of

construction activities and stabilization of the Project site, a Notice of Termination shall be submitted via SMARTS.

RCM WQ-2 Erosion and Sediment Control Plans. In compliance with the requirements of Title 8 Buildings and Construction, Chapter 8.30, Grading and Excavation, Article XIII, Erosion Control of the City of Lake Forest Municipal Code, the Applicant shall submit a grading plan and erosion control plan to the Director of the City of Lake Forest Public Works Department, or designee, for review and approval prior to issuance of a grading permit. The Applicant shall also submit erosion and sediment control plans annually to the Director of the City of Lake Forest Public Works Department, or designee, for review and approval by September 15th of each year during construction.

RCM WQ-3 Water Quality Management Plan. Prior to issuance of building permits, the Applicant shall submit a Final Water Quality Management Plan (WQMP) to the Director of the City of Lake Forest Public Works Department, or designee, for review and approval in compliance with the *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County* (North Orange County MS4 Permit), Order No. R8-2009-0030, NPDES No. CAS618030 (as amended by Order No. R8-2010-0062). The Final WQMP shall be prepared consistent with the requirements of the *Model Water Quality Management Plan (WQMP)* (County of Orange 2011), *Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs)* (County of Orange 2013), the *City of Lake Forest Local Implementation Plan (LIP)* (2010), and *Managing Wet Weather with Green Infrastructure Municipal Handbook Green Streets* (EPA 2008), or subsequent guidance manuals. The Final WQMP shall specify the BMPs to be incorporated into the project design to target pollutants of concern in runoff from the Project site. The Final WQMP shall also incorporate the results of the Final Hydrology and Hydraulic Analyses to demonstrate that the detention facilities meet the hydromodification requirements of the North Orange County MS4 Permit. The Director of the City of Lake Forest Public Works Department, or designee, shall ensure that the BMPs specified in the Final WQMP are incorporated into the final project design.

RCM WQ-4 Final Hydrology and Hydraulic Analyses. Prior to issuance of building permits, the Applicant shall submit Final Hydrology and Hydraulic Analyses to the Director of the City of Lake Forest Public Works Department, or designee, and the Orange County Flood Control District (OCFCD) for review and approval. The Final Hydrology and Hydraulic Analyses shall be prepared consistent with the requirements of the Orange County Hydrology Manual (Orange County Environment Agency 1986) and Orange County Hydrology Manual Addendum No. 1 (Orange County Environment Agency 1996), or subsequent guidance manuals. The Final Hydrology and Hydraulic Analyses shall confirm that the on-site storm drains, on-site detention basins, and any other drainage structures are appropriately sized to accommodate stormwater

runoff from the design storm so that the peak flow of stormwater discharge from the Project site is less than existing conditions. The Final Hydrology and Hydraulic Analyses shall also demonstrate that the detention facilities meet the hydromodification requirements of the *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County* (North Orange County MS4 Permit), Order R8-2009-0030, NPDES No. CAS618030 (as amended by Order No. R8-2010-0062). In compliance with the hydromodification requirements, the post-project runoff discharge volume for the 2-year storm shall not exceed that of the predevelopment condition by more than 5 percent, and the time of concentration of post-development runoff for the 2-year storm event shall not be greater than 5 percent less than that of the predevelopment condition. The Director of the City of Lake Forest Public Works Department, or designee, shall ensure that the drainage facilities specified in the Final Hydrology and Hydraulic Analyses are incorporated into the final project design.

RCM WQ-5

Groundwater Dewatering Permits. If groundwater dewatering is required during excavation activities, the Applicant shall obtain coverage under one of two orders, or any subsequent orders, that apply to groundwater discharges to surface waters within the Newport Bay/San Diego Creek Watershed depending on the nature of the groundwater. The *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality* (Order No. R8-2009-0003, NPDES No. CAG998001) covers discharges to surface waters that pose an insignificant (de minimus) threat to water quality within. This Order would be applicable to the project if it can be demonstrated that the groundwater being discharged to surface waters does not contain pollutants of concern (selenium and nitrates) in the discharge. However, if groundwater is found to contain petroleum hydrocarbons, solvents, metals and/or salts, the project would be subject to the *General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites Within the San Diego Creek/Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts* (Order No. R8-2007-0041, NPDES No. CAG918002, as amended by ~~R8-2007-0041~~ R8-2009-0045), which covers general discharge permits for discharges to surface waters of groundwater resulting from groundwater dewatering operations and/or groundwater cleanup activities at sites within the San Diego Creek/Newport Bay Watershed that have been polluted by petroleum hydrocarbons, solvents, metals and/or salts, or nutrients, selenium, and other pollutants of TMDL concern. This shall include submission of a Notice of Intent (NOI) for coverage under the permit to the Santa Ana Regional Water Quality Control Board (RWQCB) at least 45 days prior to the start of dewatering. Groundwater dewatering activities shall comply with all applicable provisions in the permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.

4.10.9.2 Mitigation Measures

The proposed Project would not result in significant impacts related to hydrology and water quality, and no mitigation is required.

4.10.10 Level of Significance after Mitigation

Construction and operational impacts related to hydrology and water quality would be less than significant.

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4.11 LAND USE AND PLANNING

This section describes the existing land uses on the Project site and in its vicinity, and evaluates the compatibility of the proposed Project with surrounding land uses and relevant policy and planning documents. The consistency analysis presented in this section was prepared in compliance with *California Environmental Quality Act Guidelines* (State CEQA Guidelines) Section 15125(d). Information presented in this section is based on information provided in the City of Lake Forest (City) General Plan (last amended in 2016), the City's General Plan Land Use Map (2016), the City's Zoning Code (2019), the City's Zoning Map (2019), the Orange County (County) Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) (1996), and the Nakase Project Fiscal Impact Analysis (Stanley R. Hoffman Associates, May 2018), which is included in Appendix N of this EIR. In addition, pursuant to State CEQA Guidelines Section 15125(d), this Environmental Impact Report (EIR) evaluates the proposed Project's consistency with other applicable planning documents as they relate to specific topical sections within Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

4.11.1 Scoping Process

The Initial Study/Notice of Preparation found that the proposed Project would not disrupt/realign the existing roadway network or affect/disrupt residential neighborhoods in the Project site vicinity; therefore, it was determined that implementation of the proposed Project would not physically divide an established community. This topic will not be discussed further in this section.

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Five comment letters included comments related to Land Use/Planning.

The letter from the Southern California Association of Governments (SCAG) (August 15, 2018) expressed concern with the proposed Project's consistency with the 2016 Regional Transportation Plan/Sustainable Community Strategies (RTP/SCS). SCAG also suggested including a side-by-side comparison table for consistency analysis in the EIR and recommended the use of the Final Program EIR for 2016 RTP/SCS for guidance and potential project-level mitigation measures.

The letter from Sima Soltani (July 24, 2018) expressed favor for new housing on the Project site. The letter from Loretta Herrin (July 25, 2018) suggested evaluating the development of a cemetery for veterans or an aquatic center on the Project site. The letter from Bob Stuart (July 25, 2018) expressed opposition to a zoning change for the nursery. The letter from Charles Larson (August 4, 2018) expressed favor for agricultural zoning on the Project site.

4.11.2 Existing Environmental Setting

The Project site is located in the north-central portion of the City of Lake Forest, which is in the south-central portion of the County. The current Nakase Brothers Wholesale Nursery is located at 20621 Lake Forest Drive. As illustrated in Figure 3.1, Regional Project Location, the Project site is bounded by Rancho Parkway to the northeast, Bake Parkway to the northwest, Serrano Creek to the southeast, and light industrial uses to the southwest. The Project site is rectangular in shape and

consists of a single parcel (Assessor's Parcel Number [APN] 612-221-01) totaling approximately 122 acres (ac).

As shown in Figure 3.3, Existing Land Uses, the Project site is developed with a wholesale plant nursery. Figure 3.3 also shows that the Project site is surrounded by a variety of residential, business park, regional park/open space, commercial, and light industrial land uses. Specifically, land uses surrounding the Project site include a commercial center with a Home Depot, 24 Hour Fitness, FedEx, Auto Repair Shop, Shell Gas Station, and various restaurants immediately northeast of the site. Business parks with several office buildings and surface parking lots are immediately southwest of the Project site. Business parks and a hotel are located to the northwest of the Project site beyond Bake Parkway and to the southeast of the Project site on the opposite side of Serrano Creek. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the Project site.

4.11.3 Regulatory Setting

4.11.3.1 Federal Regulations

There are no federal regulations applicable to land use and planning.

4.11.3.2 State Regulations

California State Planning and Zoning Law. This law, which is codified in California Government Code sections 65000-66037, delegates most of the State's local land use and development decisions to cities and counties. The California Government Code establishes specific requirements pertaining to the regulation of land uses by local governments, including general plan requirements, specific plans, subdivisions, and zoning. California Government Code Section 65302 requires that all California cities and counties include the following seven elements in their general plan:

- Land Use
- Circulation
- Housing
- Conservation
- Open Space
- Noise
- Safety

Cities and counties in the San Joaquin Air Pollution Control District must also address air quality in their general plans. Cities and counties that have identified disadvantaged communities must also address environmental justice in their general plans, including air quality.¹

¹ Senate Bill 1000 (SB 1000), adopted in 2016 requires both cities and counties that have disadvantaged communities to incorporate environmental justice (EJ) policies into their general plans, either in a separate EJ element or by integrating related goals, policies, and objectives throughout the other elements. This update, or revision if the local government already has EJ goals, policies, and objectives, must happen "upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018."

Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375). This statute requires California’s regional planning agencies to include a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy in their Regional Transportation Plans (RTP). Senate Bill 375 (SB 375) was enacted to reduce greenhouse gas emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. Under the law, California’s regional planning agencies are required to include a Sustainable Communities Strategy (SCS) in their Regional Transportation Plans (RTP). The SCS provides a plan for meeting the regional emissions reduction targets established by the California Air Resources Board (ARB). If the emissions reduction targets cannot be met through the SCS, an Alternative Planning Strategy (APS) may be developed that shows how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures of policies. SB 375 also offers local governments regulatory and other incentives to encourage more compact new development and transportation alternatives.

The requirements of SB 375 are reflected in the 2016 RTP/SCS adopted by the Southern California Association of Governments (SCAG), which serves as the regional planning agency in the six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties. The 2016–2040 RTP/SCS is discussed in further detail below.

4.11.3.3 Regional Regulations

The Project site is covered by several planning documents and programs that have varying degrees of regulation over use of the Project site. The following paragraphs explain regional regulations, plans, and policies applicable to the Project site that are analyzed in this EIR section.

Southern California Association of Governments (SCAG). As discussed above, regional planning in Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties is conducted by SCAG. SCAG is also the federally designated Metropolitan Planning Organization (MPO) for these six counties. As the designated MPO, SCAG is mandated by the federal government to research and prepare plans for transportation, a growth forecast, hazardous waste, and air quality. The growth forecast serves as the foundation of these plans. Of the various plans adopted by SCAG, the Regional Comprehensive Plan and the 2016–2040 RTP/SCS are relevant to the Project.

Regional Comprehensive Plan and Guide. In 2008, SCAG adopted the Regional Comprehensive Plan (RCP) for the purpose of providing a comprehensive strategic plan for defining and solving housing, traffic, water, air quality, and other regional challenges. The 2008 RCP has two primary objectives in implementing this strategic plan: (1) integrating transportation, land use, and air quality planning approaches, and (2) outlining key roles for public and private sector stakeholders to implement reasonable policies regarding transportation, land use, and air quality approaches. While the 2008 RCP outlines several policies to inform local decision-makers within the SCAG region with respect to policy and planning decisions, these policies are considered recommendations and are not mandated by law.

With respect to land use policy, the 2008 RCP includes a Land Use and Housing chapter that aims to link land use and transportation planning decisions to the projected population and economic growth in the SCAG region. Specifically, the Land Use and Housing chapter of the 2008

RCP promotes sustainable planning for land use and housing in the SCAG region by maximizing the efficiency of the existing circulation network, providing a greater variety in housing types, promoting a diverse and growing economy, and protecting the existing natural environment. The 2008 RCP identifies 2% Strategy Areas as part of the Sustainability Planning Grant (formerly known as Compass Blueprint growth vision); however, these areas have since been updated and replaced by the High-Quality Transit Areas (HQTAs) identified in the 2016–2040 RTP/SCS.

Regional Transportation Plan/Sustainable Communities Strategy. On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS. The 2016–2040 RTP/SCS is a long-range planning document that provides a common foundation for regional and local planning, policymaking, and infrastructure goals in the SCAG region. The overall vision for the 2016–2040 RTP/SCS is to allow for compact communities that are connected by numerous public transit options, are more walkable, and are safe for bicyclists. By promoting more compact communities and improving the regional transit system, SCAG’s 2016–2040 RTP/SCS aims to reduce vehicular miles traveled and associated air quality and greenhouse gas emissions, promote active lifestyles, and fuel economic growth.

The 2016–2040 RTP/SCS establishes a number of initiatives aimed at improving the regional transit system and reducing automobile reliance in the SCAG planning area. Examples of these initiatives include promoting alternative modes of transportation and active transportation (e.g., bicycling and focusing new growth near transit and HQTAs and Livable Corridors). HQTAs are defined as walkable transit villages or corridors within 0.5 mile of a well-serviced transit stop or transit corridor with a 15-minute or less service frequency during peak commuting hours. Livable corridors are defined as arterials characterized by a mix of higher-density residential uses, employment centers, active transportation, and alternative transportation modes. In addition, the 2016–2040 RTP/SCS aims to provide sustainable transportation options or residents of the region through the creation of Neighborhood Mobility Areas (NMAs). NMAs promote active transportation and encourage biking, walking, skateboarding, neighborhood electric vehicles, and senior mobility devices in place of automobile use. Overall, the 2016–2040 RTP/SCS aims to focus new growth around transit.

The following goals in the 2016–2040 RTP/SCS are applicable to the proposed Project:¹

Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness.

Goal 2: Maximize mobility and accessibility for all people and goods in the region.

Goal 3: Ensure travel safety and reliability for all people and goods in the region.

Goal 4: Preserve and ensure a sustainable regional transportation system.

Goal 5: Maximize the productivity of our transportation system.

¹ Goal 9 of the 2016–2040 RTP/SCS relates to planning/policy actions to be taken by regional and local agencies; therefore, it does not apply to the Project.

Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).

Goal 7: Actively encourage and create incentives for energy efficiency, where possible.

Goal 8: Encourage land use and growth patterns that facilitate transit and active transportation.

Orange County Natural Community Conservation Plan and Habitat Conservation Plan. The City of Lake Forest, including the Project site, is located within the Central and Coastal Subregion of the Orange County NCCP/HCP. The Central and Coastal Subregion encompasses approximately 208,000 ac of developed, agricultural, and undeveloped natural lands. The majority of land within this subregion has already been developed with urban land uses. Habitats of concern subject to potential development pressure include, but are not limited to, coastal sage scrub and other sage, chaparral, woodland and forest, riparian, wetlands, and native annual grasses. As part of the NCCP/HCP, projects that would impact sensitive habitat areas, as designated by the NCCP/HCP, are required to pay NCCP/HCP in lieu fees to mitigate impacts to sensitive biological resources.

The Project site is located within the jurisdiction of the Central and Coastal Orange County NCCP/HCP. Specifically, the Project site is located within an area identified as “developed” and is located well outside the habitat reserve.

4.11.3.4 Local Regulations

The City has preeminent decision-making authority regarding allowable land uses on the Project site. The City’s General Plan and Zoning Code both apply to the Project site.

City of Lake Forest General Plan. The City of Lake Forest General Plan contains goals, policies, and plans that are intended to guide land use and development decisions. The General Plan consists of a Land Use Map and the following six elements, or chapters, which together fulfill the State requirements for a General Plan:

- Land Use Element
- Housing Element
- Circulation Element
- Recreation and Resources Element (satisfies the State’s Conservation and Open Space Element requirements)
- Safety and Noise Element (satisfies the State’s Safety and Noise Element requirements)
- Public Facilities/Growth Management Element (optional element not required by State law)

At the heart of the General Plan is the Land Use Element (2010). This element presents the City’s goals and policies directing the long-term growth, development, and revitalization of the City. The

Land Use Element serves as a guide to the allocation of land use in the City and has major impacts on key issues and subject areas examined in the other elements of the General Plan. The Land Use Map, which illustrates land uses within the City, is a primary feature of the Land Use Element. Land use designations indicate the type and nature of development that is allowed in a given location.

As shown on Figure 3.5, General Plan Land Use and Business Development Overlay, the Project site is designated for Business Park uses on the City's General Plan Land Use Map. The Business Park designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. The Business Park designation does not provide for agricultural uses. Thus, the existing land use is inconsistent with the current Business Park designation of the Project site. As stated in the City's General Plan Land Use Element, the maximum intensity of development allowed within the Business Park designation is a Floor Area Ratio (FAR)¹ of 1.0:1.

The Project site is also within the Business Development Overlay (BDO) established by the City. The BDO designation applies to most areas designated for Commercial, Professional Office, Business Park, and Light Industrial land uses, and is intended to provide a balance of land uses that contribute to the future financial success of the City. Proposed land use designation changes within the BDO may not result in a loss of future net revenue for the City.²

The following policies included in the City's General Plan are relevant to the proposed Project:

- **Circulation Element**

- **Policy 4.1:** Promote the provision of non-vehicular circulation within Lake Forest.
- **Policy 4.3:** Improve pedestrian access from neighborhoods to commercial areas.
- **Policy 5.1:** Require sufficient off street parking for all land uses and maximize the use of parking facilities in Lake Forest.

- **Housing Element**

- **Policy 1.1:** Ensure the provision of a variety of housing opportunities (ownership and rental) in Lake Forest including low-density single-family homes, moderate-density townhomes, higher-density apartments and condominiums, mixed-use development, second dwelling units, and mobile homes to fulfill regional housing needs.
- **Policy 1.3:** Ensure that the design of new residential development is compatible with that of existing residences.
- **Policy 1.4:** Encourage the development of residential units that are designed and marketed to meet the needs of extremely low income households and special groups, such as the elderly, persons with disabilities (including developmental disabilities), and those in need of temporary shelter.

¹ Floor area ratio is the ratio of a building's total (gross) floor area to the size of the piece of land on which it is built.

² City of Lake Forest General Plan. Land Use Element. June 1994 (revised September 2016).

- **Policy 1.5:** Encourage the development of new housing units in close proximity to public transportation and community services, including mixed use development in the Baker Ranch and Portola Hills Planned Communities.
- **Policy 1.8:** Encourage residential developments to incorporate a minimum of 15% affordable units, including units affordable to extremely low income households.
- **Policy 4.4:** Encourage the provision of designs which support aging in place (such as universal design) in new development.
- **Land Use Element**
 - **Policy 2.1:** Enhance the physical attributes of Lake Forest to create an identifiable and distinct community within Orange County.
 - **Policy 2.2:** Promote high quality in the design of all public and private development projects.
 - **Policy 3.1:** Ensure that new development fits within the existing setting and is compatible with the physical characteristics of available land, surrounding land uses, and public infrastructure availability.
 - **Policy 3.3:** Ensure that the affected public agencies can provide necessary facilities and services to support the impact and intensity of development in Lake Forest and in areas adjacent to the City.
 - **Policy 3.4:** Blend residential and nonresidential development with landscaping and architectural design techniques to achieve visual compatibility.
 - **Policy 4.1:** Ensure that all development proposals within the planned community areas conform to applicable development plans and agreements.
 - **Policy 5.7:** Preserve the fiscal well-being of the community by ensuring that land use designation changes for land within the Business Development Overlay will not result in a loss of future net revenue for the City.
- **Public Facilities/Growth Management Element**
 - **Policy 8.1:** Utilize information on the jobs/housing balance in the City and region as a factor in land use decision-making.
- **Recreation and Resources Element**
 - **Policy 1.2:** Maximize the utilization of existing parks, recreational facilities, and open space within Lake Forest.
 - **Policy 1.6:** Promote the future development of community centers as focal points for local activities.
 - **Policy 1.7:** Develop a network of multipurpose trails to provide convenient, safe access to recreational, residential, and commercial areas.

- **Policy 2.1:** Conserve and protect important natural plant and animal communities, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.
- **Policy 2.3:** Encourage the expansion of reclaimed water production and use.
- **Policy 2.4:** Conserve and protect important topographical features, watershed areas, and soils through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.
- **Policy 4.1:** Protect areas of important historic, archaeological, and paleontologic resources.
- **Policy 5.1:** Solicit citizen participation during the early stages of major public or private development projects and regulatory programs.
- **Policy 7.1:** 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 7.5:** Implement land use policy aimed at achieving a greater balance between jobs and housing in Lake Forest.
- **Policy 7.6:** Integrate air quality planning with land use and transportation planning.
- **Policy 7.7:** Promote energy conservation and recycling by the public and private sector in Lake Forest.
- **Safety and Noise Element**
 - **Policy 1.1:** Reduce the risk of impacts from geologic and seismic hazards.
 - **Policy 1.2:** Protect the community from flooding hazards.
 - **Policy 2.4:** Reduce the risk to the community from fire.
 - **Policy 5.1:** Utilize noise/land use compatibility standards as a guide for future planning and development decisions.
 - **Policy 5.2:** Provide noise control measures, such as berms, walls, and sound attenuating construction in areas of new construction or rehabilitation.
 - **Policy 6.1:** Reduce noise impacts to sensitive land uses from transportation noise sources.

City of Lake Forest Municipal Code. Zoning is the division of a city into districts and the application of land use and development regulations specific to each district. The City of Lake Forest Zoning Code, Title 9 of the Municipal Code, includes development standards applicable to the Project site. It establishes zone-specific height limits, setback requirements, parking ratios, and other development standards, and specifies permitted and prohibited uses.

It is the intent of the City that the General Plan Land Use Element and the Zoning Code be consistent in order to ensure that long-term goals and objectives are implemented through land use

regulations and other tools. The Zoning Code is a primary tool for implementing the City's General Plan. As shown in Figure 3.6, Zoning Map, the Project site's zoning classification is General Agriculture (A1). The A1 district allows for agriculture, outdoor recreational uses, and other low-intensity uses requiring open space. According to Section 9.72.010 of the City's Zoning Code, the A1 district may be used as an interim zone in those areas which the General Plan may designate for more intensive urban uses in the future. This is the case with the Project site, which is currently designated for Business Park uses.

Approval of the proposed Project would include a Zone Change (ZC 05-17-5034) to Planned Community. Approval of the Planned Community Program outlined in the Area Plan would be required as part of the Zone Change. Should the City Council approve the proposed Project, the Area Plan would replace and supersede the Zoning requirements that apply to the Project site with those contained in the Area Plan. It should be noted that the Area Plan would not replace every provision of the City's Zoning Code. Some of the development standards established in the Zoning Code, including the off-street parking requirements, would still apply to the proposed Project. If the Area Plan is silent regarding a particular item addressed in the City's Zoning Code, the Zoning Code would continue to apply.

4.11.4 Methodology

The impact analysis presented in this Land Use and Planning section evaluates potential physical impacts of the proposed Project on land use compatibility and considers whether the proposed Project would result in potential inconsistencies with relevant plans or policies contained in applicable planning documents adopted by the City and other agencies. Neither CEQA nor the *State CEQA Guidelines* set forth standards for determining whether or not a project is consistent with an applicable plan; rather, the final determination that a project is consistent or inconsistent with an applicable plan is made by the Lead Agency when it acts on the project. The analysis in this Draft EIR discusses the findings of policy review and is meant to provide a guide for decision-makers during policy interpretation.

A project's inconsistency with a plan or policy is only considered significant if such inconsistency would result in a significant physical environmental impact (per *State CEQA Guidelines* Section 15382). This EIR section determines whether or not the proposed Project would conflict with any adopted land use policies or programs and whether mitigation is feasible. Under this approach, a policy or program conflict is not in and of itself considered a significant environmental impact. An inconsistency between the proposed Project and an applicable plan is a legal determination that may or may not indicate the likelihood of an environmental impact. In some cases, an inconsistency may be evidence that an underlying physical impact is significant and adverse.

4.11.5 Thresholds of Significance

The proposed Project may be deemed to have a significant impact with respect to land use and planning if it would:

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- Threshold 4.11.1: Physically divide an established community**
- Threshold 4.11.2: 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**
- Threshold 4.11.3: Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (i.e. noise, aesthetics, etc.) that preclude use of the land as it was intended by the General Plan**
- Threshold 4.11.4: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect**
- Threshold 4.11.5: Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant**

The Initial Study, included as Appendix A, substantiates that there would be no impacts associated with Threshold 4.11.1. This threshold will not be addressed in the following analysis.

4.11.6 Project Impacts

Threshold 4.11.2: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

AND

Threshold 4.11.4: Would the Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The main documents regulating land use for the Project site and the immediate vicinity are the City's General Plan and its Zoning Code. The proposed Project's relationship to these planning documents is described below. In light of SCAG's request to evaluate the Project's consistency with the 2016–2040 RTP/SCS, the proposed Project's relationship to that document is also provided below.

SCAG Regional Comprehensive Plan. The 2008 Regional Comprehensive Plan (RCP) addresses regional goals related to growth and infrastructure in the Southern California region. The RCP also addresses issues such as housing, traffic, air quality, and water resources as a guide for local agencies to use in preparing plans that deal with regional issues. The RCP outlines a vision of how the Southern California region can balance growth with conservation in order to achieve a higher quality of life. In order to achieve this balance, the RCP establishes the following land use

goals: (1) focus growth in existing centers and along major transportation corridors, (2) encourage mixed-use development, (3) provide new housing opportunities, (4) encourage development near existing and planned transportation stations to reduce traffic congestion and associated air pollutants, (5) preserve existing single-family neighborhoods, and (6) protect open space and environmentally sensitive habitat areas from development. RCP Goal 2 does not apply to the proposed Project.

The Project site is located immediately south of Bake Parkway, which is a Primary Roadway consisting of four lanes. The proposed Project would replace a wholesale plant nursery with a mix of land uses, including a residential neighborhood, an elementary school site, and neighborhood parks. Although the Project would not include new commercial or industrial development, it would be located on a site that is surrounded by existing commercial and industrial uses. Uses proposed as part of the Project would be easily accessed from Bake and Rancho Parkways and other major transportation corridors near the site (e.g., SR-241). In addition, the proposed Project would be located immediately adjacent to Class II bike lanes and bus stops on Bake Parkway and 3.5 mi northeast of the Irvine Transportation Center, a multimodal transit station that includes a Metrolink/Amtrak train station and serves as hub for express, local and rail-feeder bus services operated by OCTA. Residents may utilize alternative transportation to commute to jobs in surrounding business parks or the nearby Irvine Spectrum employment center. Therefore, the Project would be consistent with RCP Goal 1 to focus growth along major transportation corridors and Goal 4 to encourage new development near existing transportation stations.

The proposed Project would provide up to 776 new housing units on the Project site. Therefore, the Project would be consistent with RCP Goal 3 to provide new housing opportunities.

Development of the proposed Project would be consistent with existing single-family neighborhoods in the vicinity of the Project site. As such, the proposed Project would not interfere or conflict with the existing land use patterns and visual character of established residential neighborhoods near the site. Therefore, the Project would be consistent with RCP Goal 5 of preserving existing single-family neighborhoods.

The proposed Project would include a 10.4 ac open space and habitat restoration area on the Project site adjacent to Serrano Creek. The open space and habitat restoration area would be placed into a conservation easement or similar legal protection that would protect the lands in perpetuity. Therefore, the Project would be consistent with RCP Goal 6 of protecting open space and environmentally sensitive habitat areas from development.

For the reasons stated above, the proposed Project would be consistent with applicable goals and policies in SCAG's 2008 RCP.

SCAG Regional Transportation Plan/Sustainable Community Strategies. Table 4.11.A provides a consistency analysis of the goals from the 2016–2040 RTP/SCS that are relevant to the proposed Project. In order to eliminate repetitive policies and focus on key issues, goals that are not relevant to the proposed Project are not included in Table 4.11.A. As stated in Table 4.11.A, the proposed Project would be consistent with applicable goals in the 2016–2040 RTP/SCS, and no mitigation is required.

City of Lake Forest General Plan. As noted above, the proposed Project includes a General Plan Amendment request to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High Density Residential, Public Facility, Community Park/Open Space, and Regional Park/Open Space. The Business Development Overlay applies to areas designated for Commercial, Professional Office, Business Park, and Light Industrial land uses. The General Plan Amendment would remove the Business Development Overlay from the Project site. Therefore, upon its approval by the City Council, the proposed Project would be consistent with the land use designations contained in the City's General Plan.

Table 4.11.B provides a consistency analysis of the policies from the City's General Plan that are relevant to the proposed Project. In order to eliminate repetitive policies and focus on key issues, policies that are not relevant to the proposed Project are not included in Table 4.11.B. As stated in Table 4.11.B, the proposed Project would be consistent with most of the applicable General Plan policies, with the exception of General Plan Recreation and Resources Element Policy 7.5 and General Plan Housing Element Policy 4.4. By adding 776 new housing units to the Project site, the proposed Project would lower the City's jobs-to-household ratio, resulting in a greater imbalance between jobs and housing in the City (Recreation and Resources Element Policy 7.5). In addition, the proposed Project does not contain any specific design elements that would support aging-in-place (General Plan Housing Element Policy 4.4). Despite these inconsistencies, the Project would generally be consistent with the goals and policies contained in the City's General Plan. As discussed elsewhere in this EIR, the change in planned land uses on the Project site and the resulting change in the City's jobs-housing balance alone would not result in any significant and unavoidable impacts. Similarly, although universal design is encouraged in new development, it is not required under the General Plan. Thus, inconsistency with General Plan Housing Element Policy 4.4 would not result in any significant and unavoidable impacts. Therefore, the proposed Project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.

City of Lake Forest Municipal Code. As described above, the proposed Project includes a Zone Change to Planned Community and the Area Plan would include a Planned Community Program applicable to the Project site. Should the City Council approve the proposed Project, the Area Plan would replace and supersede the Zoning requirements that apply to the Project site with those contained in the Area Plan. Some provisions of the City's Zoning Code would remain in effect. Therefore, upon its approval by the City Council, the proposed Project would be consistent with the City's Municipal Code and Zoning. Therefore, the proposed Project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.

**Table 4.11.A: Regional Transportation Plan/Sustainable Communities Strategy
Policy Consistency Analysis**

Goals	Consistency Analysis
<p>RTP/SCS Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness.</p>	<p>Consistent. Development of the currently underutilized Project site would provide additional housing opportunities in a region that is currently experiencing a severe housing shortage. The Project would change the General Plan Land Use designation on the Project site from Business Park to allow residential uses and an elementary school site, which would likely decrease the potential number of jobs in the City of Lake Forest. However, the development of up to 776 new housing units in an area of Lake Forest that is surrounded by business parks would improve the region’s economic competitiveness by ensuring that area workers would have access to new housing in close proximity to their jobs. Therefore, the proposed Project would be consistent with Goal 1 in the 2016–2040 RTP/SCS.</p>
<p>RTP/SCS Goal 2: Maximize mobility and accessibility for all people and goods in the region.</p>	<p>Consistent. The proposed Project would result in the conversion of a wholesale plant nursery to a residential community and an elementary school site. The Project site is located directly adjacent to Bake Parkway, which is a Primary Roadway that runs in a general north-south direction through the Cities of Irvine and Lake Forest. The Project site would also be located approximately 0.5 mi south of the SR-241/Alton Parkway interchange. Access to SR-241 from the Project site is also available via Rancho Parkway and Lake Forest Drive (to and from the northwest) and Portola Parkway South interchanges. The SR-241/Lake Forest Drive interchange is located approximately 0.2 mi northeast of the Project site and the SR-241/Portola Parkway South interchange is approximately 0.5 mi east of the Project site.</p> <p>The Project would provide off-street bicycle and pedestrian paths along the on-site collector streets, the perimeter of the Central Park, and a connection to the Serrano Creek Trail from the southeastern Project site boundary. The Project bikeways would connect with existing Class II bikeways (on-street bicycle lanes), which are located on both sides of Bake Parkway, Rancho Parkway South and Rancho Parkway.</p> <p>The Project would provide access to the site from Bake and Rancho Parkways, which would serve to connect the site with the local and regional transportation systems. As such, development of the proposed Project would maximize mobility and accessibility to the site, which is currently only accessible via a single driveway off Lake Forest Drive. In addition, the Project would provide connections to the existing regional bikeway and trail network, which would enhance nonmotorized mobility and accessibility in the region. Therefore, the proposed Project would be consistent with Goal 2 in the 2016–2040 RTP/SCS.</p>
<p>RTP/SCS Goal 3: Ensure travel safety and reliability for all people and goods in the region.</p>	<p>Consistent. All proposed pedestrian, bike, roadway, and trail improvements included as part of the proposed Project would comply with City and OCFA standards to ensure their safety and reliability. Therefore, the proposed Project would be consistent with Goal 3 in the 2016–2040 RTP/SCS.</p>
<p>RTP/SCS Goal 4: Preserve and ensure a sustainable regional transportation system.</p>	<p>Consistent. As described above in the analysis for Goal 2, the Project would provide a robust on-site circulation system that would accommodate pedestrians and cyclists. The Project would also provide connections to the existing regional bikeway and trail network, thereby encouraging the use of active transportation modes. Therefore, the proposed Project would be consistent with Goal 4 in the 2016–2040 RTP/SCS.</p>
<p>RTP/SCS Goal 5: Maximize the productivity of our transportation system.</p>	<p>Consistent. The Project would provide access to the site from Bake and Rancho Parkways, which would serve to connect the site with the local and regional transportation systems. Signalized intersections at these access points will include road-embedded sensors and will be well-timed for maximum efficiency. As such, development of the proposed Project would maximize the productivity of the existing roadway network in the vicinity of the site. In addition, the Project would provide connections to the existing regional bikeway and trail network, which would encourage greater use of the region’s existing sidewalks, bikeways, and multi-purpose trails. Therefore, the proposed Project would be consistent with Goal 5 in the 2016–2040 RTP/SCS.</p>

Table 4.11.A: Regional Transportation Plan/Sustainable Communities Strategy Policy Consistency Analysis

Goals	Consistency Analysis
<p>RTP/SCS Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).</p>	<p>Consistent. As described above in the analysis for Goal 2, the Project would provide a robust on-site circulation system that would accommodate pedestrians and cyclists. The Project would also provide connections to the existing regional bikeway and trail network, thereby encouraging the use of active transportation modes.</p> <p>As described in Section 4.3, Air Quality, of this EIR, construction and operation of the proposed Project would result in less than significant air quality impacts with the implementation of Regulatory Compliance Measures. Because the Project would encourage active transportation and not degrade air quality, the proposed Project would be consistent with Goal 6 in the 2016–2040 RTP/SCS.</p>
<p>RTP/SCS Goal 7: Actively encourage and create incentives for energy efficiency, where possible.</p>	<p>Consistent. The proposed Project would provide energy efficiency through compliance with the California Green Building Standards Code (CALGreen). Sustainability features proposed as part of the Project include, but are not limited to: the installation of a 240-volt circuit in each home to facilitate electric vehicle (EV) charging; the installation of light-emitting diode (LED) technology within homes; and the installation of EV charging stations at Central Park. As such, the proposed Project would be consistent with Goal 7 in the 2016–2040 RTP/SCS.</p>
<p>RTP/SCS Goal 8: Encourage land use and growth patterns that facilitate transit and active transportation.</p>	<p>Consistent. As described above in the analysis for Goal 2, the Project would provide a robust on-site circulation system that would accommodate pedestrians and cyclists. The Project would also provide connections to the existing regional bikeway and trail network, thereby encouraging the use of active transportation modes.</p> <p>The Project site is currently served by OCTA Route 206, which provides bus service along Bake Parkway and a portion of Dimension Drive. OCTA Route 177, which provides bus service along Lake Forest Drive, is also located near the Project site. Both bus routes would provide opportunities for Project residents to use transit service.</p> <p>The Project would facilitate transit use and active transportation by providing new housing on the Project site, which is already connected to Class II bikeways and served by existing transit service on Bake Parkway. New residents would be able to cycle or take transit to work in the Irvine Spectrum, a major regional employment center that is approximately 4 mi southwest of the Project. Therefore, the proposed Project would be consistent with Goal 8 in the 2016–2040 RTP/SCS.</p>

Source: Southern California Association of Governments. 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy.
 City = City of Lake Forest
 EIR = Environmental Impact Report
 mi = miles
 OCFA = Orange County Fire Authority
 OCTA = Orange County Transportation Authority
 RTP/SCS = Regional Transportation Plan/Sustainable Community Strategies
 SR-241 = State Route 241

Table 4.11.B: General Plan Policy Consistency Analysis

Policies	Consistency Analysis
Circulation Element	
Policy 4.1: Promote the provision of non-vehicular circulation within Lake Forest.	Consistent. The proposed Project would provide off-street bicycle and pedestrian paths along the on-site collector streets, the perimeter of the Central Park, and a connection to the Serrano Creek Trail from the southeastern Project site boundary. The Project bikeways would connect with existing Class II bikeways (on-street bicycle lanes), which are located on both sides of Bake Parkway, Rancho Parkway South and Rancho Parkway. By providing connections to the existing regional bikeway and trail network as well as the existing sidewalks on Bake and Rancho Parkways adjacent to the Project site, the Project would promote the provision of non-vehicular circulation within Lake Forest. Therefore, the proposed Project would be consistent with General Plan Circulation Element Policy 4.1.
Policy 4.3: Improve pedestrian access from neighborhoods to commercial areas.	Consistent. As described above in the analysis for Circulation Element Policy 4.1, the Project would provide a robust on-site pedestrian circulation system that would connect with existing sidewalks along Bake and Rancho Parkways adjacent to the Project site. These connections would facilitate pedestrian movement between the Project's neighborhoods and nearby commercial centers on Bake and Rancho Parkways. Therefore, the proposed Project would be consistent with General Plan Circulation Element Policy 4.3.
Policy 5.1: Require sufficient off street parking for all land uses and maximize the use of parking facilities in Lake Forest.	Consistent. The proposed Project's residential uses would be required to provide off-street parking in compliance with Chapter 9.168, Off-Street Parking, of the City's Municipal Code. On-street parking will be provided to serve the Neighborhood Parks and Central Park. Therefore, the proposed Project would provide sufficient off-street parking for the Project's land uses would be considered consistent with General Plan Circulation Element Policy 5.1.
Housing Element	
Policy 1.1: Ensure the provision of a variety of housing opportunities (ownership and rental) in Lake Forest including low-density single-family homes, moderate-density townhomes, higher-density apartments and condominiums, mixed-use development, second dwelling units, and mobile homes to fulfill regional housing needs.	Consistent. The proposed Project includes the development of five residential neighborhoods consisting of 675 single-family residential for-sale units and one senior affordable housing neighborhood. Four of the residential neighborhoods would be developed at a low-medium density (7-15 du/ac); one would be developed at a medium density (15-25 du/ac), and the senior residential neighborhood would be developed at a high density (25-43 du/ac). The proposed Project would provide conventional single-family detached homes, single-family detached four-pack cluster homes, single-family attached homes, and senior affordable apartment homes. By providing several different housing product types, the proposed Project would diversify housing opportunities available in the City. Therefore, the proposed Project would provide housing opportunities to fulfill regional housing needs and is considered consistent with the General Plan Housing Element Policy 1.1.
Policy 1.3: Ensure that the design of new residential development is compatible with that of existing residences.	Consistent. Although not immediately adjacent to the Project site, single-family and multifamily residential uses exist to the northwest, northeast, and south of the Project site within several residential planned communities. These planned communities include the Foothill Ranch Planned Community to the north, the Portola Hills Planned Community to the northeast, the Baker Ranch Planned Community to the west, and the Rancho de Los Alisos Planned Community to the southeast. The proposed Project would be designed following the California Contemporary aesthetic, which includes Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles that would blend with existing residential development in the Project vicinity. In addition, the residential densities of the proposed Project would generally be similar to those of the surrounding residential communities. Therefore, the proposed Project would be designed to be compatible with existing residences and is considered consistent with the General Plan Housing Element Policy 1.3.

Table 4.11.B: General Plan Policy Consistency Analysis

Policies	Consistency Analysis
<p>Policy 1.4: Encourage the development of residential units that are designed and marketed to meet the needs of extremely low income households and special groups, such as the elderly, persons with disabilities (including developmental disabilities), and those in need of temporary shelter.</p>	<p>Consistent. As described above in the analysis for Housing Element Policy 1.1, the proposed Project would provide up to 101 rental housing units, which would be made affordable to senior citizens. Therefore, the proposed Project would be consistent with General Plan Housing Element Policy 1.4.</p>
<p>Policy 1.5: Encourage the development of new housing units in close proximity to public transportation and community services, including mixed-use development in the Baker Ranch and Portola Hills Planned Communities.</p>	<p>Consistent. The Project site is located adjacent to OCTA Route 206, which provides bus service along Bake Parkway and a portion of Dimension Drive. OCTA Route 177, which provides bus service along Lake Forest Drive, is also located near the Project site (the nearest bus stops are located at the intersection of Lake Forest Drive/Rancho Parkway). Both bus routes would provide opportunities for Project residents to use transit service. The Project would provide park space and an elementary school site. Emergency services and other community services are located within a 2 mi radius of the Project site. Therefore, the proposed Project would develop new housing in close proximity to public transportation and community services and is considered consistent with General Plan Housing Element Policy 1.5.</p>
<p>Policy 1.8: Encourage residential developments to incorporate a minimum of 15% affordable units, including units affordable to extremely low income households.</p>	<p>Consistent. The City implements this policy by requiring the preparation of an Affordable Housing Implementation Plan (AHIP). The AHIP, which is included in the Development Agreement between the Applicant and the City, must demonstrate how the project complies with the City’s Affordable Housing Point System by meeting certain affordable housing production requirements. The Affordable Housing Point System awards “points” for each affordable unit provided on-site. Additional points are awarded if the units are made available as rental units for very low- or low-income households (points are weighted toward production of very-low income units). Two bedroom and second units receive additional points. The City requires that the Project provide a number of affordable units that is greater than 8.5 percent of the total number of market-rate units for which the Project is entitled. Based on the total number of market rate housing units proposed for the Project site (675), the Applicant will be required to achieve 101 points (an amount equal to 15 percent of the total number of market-rate units approved as part of the Project) under the City’s Affordable Housing Point System. The AHIP included in the Development Agreement shows that the proposed Project would meet the City’s affordable housing production requirements by achieving the minimum number of points required under the Affordable Housing Point System. Therefore, the proposed Project would be consistent with General Plan Housing Element Policy 1.8.</p>
<p>Policy 4.4: Encourage the provision of designs which support aging in place (such as universal design) in new development.</p>	<p>Inconsistent. The Project’s single-family residential units do not contain any specific design elements that would support aging in place. Therefore, the proposed Project would be inconsistent with General Plan Housing Element Policy 4.4.</p>
<p>Land Use Element</p>	
<p>Policy 2.1: Enhance the physical attributes of Lake Forest to create an identifiable and distinct community within Orange County.</p>	<p>Consistent. As described in Section 4.1, Aesthetics, the proposed Project would contribute to the creation of an identifiable and distinct community within Lake Forest. The proposed Project includes over 24 ac of public parks, public and private recreational facilities, sport fields, trails, open space, and habitat restoration area. Specifically, improvements along the southeastern portion of the Project site are anticipated to enhance existing physical attributes of Lake Forest due to proximity to the Serrano Creek Trail. The proposed Project’s Central Park would provide a memorable entry to the community and provide space for public events like Farmer’s Markets, art fairs, and other community activities. Further, implementation of architectural and landscape design guidelines included in the Area Plan would serve to provide increased visual cohesion between the Project site and surrounding area and</p>

Table 4.11.B: General Plan Policy Consistency Analysis

Policies	Consistency Analysis
	create neighborhoods that possess a unique sense of place and individuality. Therefore, the proposed Project would be consistent with General Plan Land Use Element Policy 2.1.
Policy 2.2: Promote high quality in the design of all public and private development projects.	Consistent. The Area Plan included as part of the proposed Project provides detailed architectural and landscape design guidelines that will provide design direction and standards for future development and landscaping on the Project site. As discussed above, the proposed Project would be designed following the California Contemporary aesthetic, which includes Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles that would blend with existing residential development in the Project vicinity. The purpose of the design guidelines and development standards is to ensure that all design and development on the Project site is of high quality and maintains the Project’s overall vision. Therefore, the proposed Project represents high-quality design and would be consistent with General Plan Land Use Element Policy 2.2.
Policy 3.1: Ensure that new development fits within the existing setting and is compatible with the physical characteristics of available land, surrounding land uses, and public infrastructure availability.	Consistent. As demonstrated in Section 4.11, Land Use and Planning; Section 4.3, Air Quality; Section 4.12, Noise; and Section 4.16, Transportation, the Project is designed to be compatible with surrounding land uses. The Project would make use of existing infrastructure to minimize the need for additional public investment. Therefore, the proposed Project would be consistent with General Plan Land Use Element Policy 3.1.
Policy 3.3: Ensure that the affected public agencies can provide necessary facilities and services to support the impact and intensity of development in Lake Forest and in areas adjacent to the City.	Consistent. As discussed further in Section 4.14, Public Services, and Section 4.18, Utilities and Service Systems, the affected public agencies were contacted during preparation of this EIR to determine potential Project-related impacts to affected public agencies. As described in Sections 4.14 and 4.18, the Project’s impacts to utilities and other public services would be less than significant. Therefore, the proposed Project would be consistent with General Plan Land Use Element Policy 3.3.
Policy 3.4: Blend residential and nonresidential development with landscaping and architectural design techniques to achieve visual compatibility.	Consistent. Figure 3.8 depicts the Conceptual Landscape Plan for the proposed Project. As discussed above, the proposed Project would be designed following the California Contemporary aesthetic, which includes Coastal Contemporary, California Modern, Modern Hacienda, and Spanish architectural styles that would blend with existing residential development in the Project vicinity. The proposed Project would incorporate landscaping to achieve visual compatibility with surrounding land uses as well as to provide privacy for residents. Therefore, the proposed Project would use landscaping and architectural design to blend residential and non-residential development and is considered consistent with General Plan Land Use Element Policy 3.4.
Policy 4.1: Ensure that all development proposals within the planned community areas conform to applicable development plans and agreements.	Consistent. Should the Project be approved, the Area Plan would establish a new planned community area on the Project site. Any future development on the Project site would be required to conform with the development standards and design guidelines set forth in the Area Plan. The proposed Project also includes a Development Agreement intended to ensure that the proposed Project would not negatively affect the fiscal stability of the City. Therefore, the proposed Project would be consistent with General Plan Land Use Element Policy 4.1.
Policy 5.7: Preserve the fiscal well-being of the community by ensuring that land use designation changes for land within the Business Development Overlay will not result in a loss of future net revenue for the City.	Consistent. The City’s General Plan designates the Project site as Business Park and Business Development Overlay (BDO). To implement the Area Plan, the Project would require approval of a General Plan Amendment to change the Project site’s General Plan land use designation to Low-Medium Density Residential and Medium Density Residential (Neighborhoods One through Five, including the neighborhood parks), High Density Residential (Senior Affordable Housing), Public Facility (school site), Community Park/Open Space and Regional Park/Open Space (habitat restoration area). Neighborhood park uses would be included in each of the proposed Project’s five residential neighborhoods. A Fiscal Impact Analysis (FIA) (Appendix N) prepared by the Applicant, compares the estimated net revenue to the City resulting from

Table 4.11.B: General Plan Policy Consistency Analysis

Policies	Consistency Analysis
	implementation of the proposed Project with the estimated new revenue resulting from a hypothetical development scenario based upon the current Business Park General Plan designation. According to the FIA, the proposed Project would generate an estimated \$99,826 more in annual revenue to the City. Therefore, the proposed Project would be consistent with General Plan Land Use Element Policy 5.7.
Public Facilities/Growth Management Element	
Policy 8.1: Utilize information on the jobs/housing balance in the City and region as a factor in land use decision-making.	Consistent. According to the Existing Conditions Report prepared for the City's General Plan Update, the City of Lake Forest has a jobs-to-household ratio of 1.40, which is slightly lower than that of Orange County overall (1.55). This means that slightly more of the City's employed residents commute to jobs out of the City than come in from elsewhere. The proposed Project's addition of 776 new housing units on the Project site would slightly lower the City's jobs-to-household ratio from 1.40 to 1.36. This information will be provided to City decision makers prior to considering approval of the proposed Project. Therefore, the proposed Project would be consistent with General Plan Public Facilities/Growth Management Element Policy 8.1.
Recreation and Resources Element	
Policy 1.2: Maximize the utilization of existing parks, recreational facilities, and open space within Lake Forest.	Consistent. The proposed Project would provide a multi-purpose trail connection to the Serrano Creek Trail from the southeastern Project site boundary. By providing a connection to the existing regional trail network, the Project would encourage additional use of existing parks and recreational facilities located along the Serrano Creek Trail within Lake Forest, including Nature Park and the Whiting Ranch Open Space Preserve. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 1.2.
Policy 1.6: Promote the future development of community centers as focal points for local activities.	Consistent. The proposed Project's Central Park would provide a memorable entry to the community and provide space for public events like Farmer's Markets, art fairs, and other community activities. In addition, a private community clubhouse and recreational facility, including pools, cabanas, multipurpose rooms, barbecues, and entertainment areas, would be provided within the Central Park for use by residents only. The community clubhouse and recreational facility would serve as a gathering place for the Project's residents. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 1.6.
Policy 1.7: Develop a network of multipurpose trails to provide convenient, safe access to recreational, residential, and commercial areas.	Consistent. The proposed Project would provide off-street bicycle and pedestrian paths along the on-site collector streets, the perimeter of the Central Park, and a connection to the Serrano Creek Trail from the southeastern Project site boundary. The Project bikeways would connect with existing Class II bikeways (on-street bicycle lanes), which are located on both sides of Bake Parkway, Rancho Parkway South and Rancho Parkway. By providing connections to the existing regional bikeway and trail network as well as the existing sidewalks on Bake and Rancho Parkways adjacent to the Project site, the Project would provide convenient, safe access to recreational, residential, and commercial areas. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 1.7.
Policy 2.1: Conserve and protect important natural plant and animal communities, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.	Consistent. As discussed in greater detail in Section 3.0, Project Description, the proposed Project would provide an open space and habitat restoration area along Serrano Creek in the southern portion of the Project site. The Project site does not otherwise contain any important natural plant and animal communities. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 2.1.

Table 4.11.B: General Plan Policy Consistency Analysis

Policies	Consistency Analysis
Policy 2.3: Encourage the expansion of reclaimed water production and use.	Consistent. The proposed Project would install 8-inch reclaimed water lines in each of the Project’s collector streets. These water lines would provide reclaimed water for landscaping for the Project’s various uses. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 2.3.
Policy 2.4: Conserve and protect important topographical features, watershed areas, and soils through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.	Consistent. As discussed in greater detail in Section 3.0, Project Description, the proposed Project would provide an open space and habitat restoration area along Serrano Creek in the southern portion of the Project site. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 2.4.
Policy 4.1: Protect areas of important historic, archaeological, and paleontologic resources.	Consistent. Section 4.5, Cultural Resources, analyzes the potential for the proposed Project to result in potential impacts to archaeological or historic resources. As discussed in that section, the proposed Project would result in no impacts related to adverse changes in the significance of a historical resource because there are no previously recorded cultural resources in the proposed Project site, and the existing structure on the Project site is not a historical resource. Section 4.5 also states that the proposed Project would result in less than significant impacts related to archaeological resources with the implementation of mitigation. Section 4.7, Geology and Soils, evaluates whether the proposed Project would result in potential impacts to paleontological resources. As discussed in that section, the proposed Project would result in less than significant impacts related to the destruction of paleontological resources with the implementation of mitigation. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 4.1.
Policy 5.1: Solicit citizen participation during the early stages of major public or private development projects and regulatory programs.	Consistent. The City has encouraged public participation in the environmental review process for the proposed Project. In July 2018, the City circulated the NOP for the proposed Project and held a scoping meeting at Lake Forest City Hall on July 25, 2018. On August 15, 2019, the Community Services Commission reviewed conceptual park designs and made recommendation to the Planning Commission and City Council. The City will continue to solicit input from stakeholders throughout the Project’s environment review. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 5.1.
Policy 7.1: 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.	Consistent. As described in Section 4.3, Air Quality, the proposed Project would not conflict with the AQMP or result in any significant impacts related to implementation of the AQMP. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 7.1.
Policy 7.5: Implement land use policy aimed at achieving a greater balance between jobs and housing in Lake Forest.	Inconsistent. As described above in the analysis for Public Facilities/Growth Management Element Policy 8.1, the proposed Project’s addition of 776 new housing units on the Project site would lower the City’s jobs-to-household ratio from 1.40 to 1.36, resulting in a slightly greater imbalance between jobs and housing in the City. Therefore, the proposed Project would be inconsistent with General Plan Recreation and Resources Element Policy 7.5.
Policy 7.6: Integrate air quality planning with land use and transportation planning.	Consistent. As described above in the analysis for Recreation and Resources Element Policy 7.1, the proposed Project would not conflict with the AQMP or result in any significant impacts related to implementation of the AQMP. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 7.6.

Table 4.11.B: General Plan Policy Consistency Analysis

Policies	Consistency Analysis
Policy 7.7: Promote energy conservation and recycling by the public and private sector in Lake Forest.	Consistent. As described in Section 3.0, Project Description, the proposed Project would be consistent with California’s Title 24 energy efficiency code and would incorporate sustainability features intended to result in energy conservation. For example, the proposed Project would reduce operational emissions associated with energy consumption by installing Energy Star appliances, tankless water heater systems, and utilizing high-efficiency heating, ventilation, and air-conditioning (HVAC) systems. Therefore, the proposed Project would be consistent with General Plan Recreation and Resources Element Policy 7.7.
Safety and Noise Element	
Policy 1.1: Reduce the risk of impacts from geologic and seismic hazards.	Consistent. As discussed in Section 4.7, Geology and Soils, the Project would result in less than significant impacts related to geologic and seismic hazards with the implementation of mitigation. Therefore, the proposed Project would be consistent with General Plan Safety and Noise Element Policy 1.1.
Policy 1.2: Protect the community from flooding hazards.	Consistent. As discussed in Section 4.10, Hydrology and Water Quality, the Project would result in less than significant impacts related to causing a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding during construction or operation. Therefore, the proposed Project would be consistent with General Plan Safety and Noise Element Policy 1.2.
Policy 2.4: Reduce the risk to the community from fire.	Consistent. As described further in Section 4.19, Wildfire, the Project site is not located in a VHFHSZ, as designated by the California Department of Forestry and Fire Protection (CAL FIRE). However, the open space approximately 0.2 mi northeast of the Project site on the other side of SR-241 is considered a VHFHSZ. As such, the proposed Project would include a conceptual fuel modification plan to employ three fuel modification zones. The three proposed zones would provide an integral level of protection for structures from wildfires by slowing the speed and reducing the intensity of the fire. A conceptual Fire Master Plan and a conceptual Fire Protection Plan with Ember Mitigation has also been approved for the proposed Project. The Fire Master Plan and Fire Protection Plan address specific fire prevention and access elements required by the Lake Forest Municipal Code and the California Building Code. As discussed in Section 4.19, Wildfire, the Project would result in less than significant impacts related to wildfire. Therefore, the proposed Project would be consistent with General Plan Safety and Noise Element Policy 2.4.
Policy 5.1: Utilize noise/land use compatibility standards as a guide for future planning and development decisions.	Consistent. Section 4.12, Noise, of this EIR evaluates whether the proposed Project would result in any violations of the City’s noise standards. As discussed in that section, the Project would result in less than significant off-site construction, traffic, and operational noise and vibration impacts. This information will be provided to City decision makers prior to considering approval of the proposed Project. Therefore, the proposed Project would be consistent with General Plan Safety and Noise Element Policy 5.1.
Policy 5.2: Provide noise control measures, such as berms, walls, and sound attenuating construction in areas of new construction or rehabilitation.	Consistent. As described further in Section 3.0, Project Description, the proposed Project would construct 8-foot high noise barriers along Bake Parkway on the northwestern perimeter of the senior affordable housing and Neighborhood 1 to reduce noise for residential uses. 8-foot high noise barriers would also be constructed along Rancho Parkway on the northeastern perimeter of Neighborhood 3 for noise attenuation. Therefore, the proposed Project would be consistent with General Plan Safety and Noise Element Policy 5.2.
Policy 6.1: Reduce noise impacts to sensitive land uses from transportation noise sources.	Consistent. As discussed in Section 4.12, Noise, the proposed Project would result in less than significant traffic noise impacts. Therefore, the proposed Project would be consistent with General Plan Safety and Noise Element Policy 6.1.

Source: City of Lake Forest General Plan, as amended.

ac = acres

AQMP = Air Quality Management Plan

du/ac = dwelling units per acre

EIR = Environmental Impact Report

mi = miles

NOP = Notice of Preparation

OCTA = Orange County Transportation Authority

VHFHSZ = very high fire hazard severity zone

Threshold 4.11.3: Would the Project substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (i.e. noise, aesthetics, etc.) that preclude use of the land as it was intended by the General Plan?

Less than Significant Impact. As identified elsewhere in this EIR, development of the proposed Project would not result in significant noise, aesthetic, or other unavoidable impacts that could adversely affect adjacent uses. The existing on-site nursery use would cease prior to construction or operation; therefore, no potential conflicts with any existing on-site land uses would occur.

As discussed in Section 4.12, Noise, of this EIR, the Project would result in less than significant off-site construction, traffic, and operational noise and vibration impacts on surrounding land uses.

According to Section 4.3, Air Quality, the Project would result in less than significant air quality impacts because it would not expose nearby sensitive receptors to substantial pollutant concentrations during construction or operation (Threshold 4.3.3). In addition, the Project's construction and operational emissions would not exceed the significance thresholds established by the SCAQMD for any of the criteria pollutants (Threshold 4.3.2). The Initial Study, included as Appendix A, substantiates that impacts associated with Threshold 4.3.4 (odors and other emissions) would be less than significant because odors during construction would be temporary and the uses associated with the operation of the proposed Project would not generate objectionable odors.

Section 4.1, Aesthetics, concludes that the proposed Project would result in less than significant impacts related to aesthetics. The proposed Project would serve to provide increased visual cohesion between the Project site and the surrounding area. The landscape and architectural design guidelines set forth in the Area Plan would ensure that the Project's development would be visually compatible with surrounding land uses (Threshold 4.1.3). Finally, the proposed Project is not anticipated to result in excessive lighting or generate glare that would adversely affect surrounding land uses (Threshold 4.1.4). Therefore, the proposed Project would result in a less than significant impact related to potential conflicts with adjacent land uses, and no mitigation is required.

Threshold 4.11.5: Would the Project conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant?

Less than Significant Impact. The City is a participant in the Orange County Central and Coastal NCCP/HCP. According to the *Biological Technical Report for the Nakase Property Project* (Glenn Lukos Associates, Inc., March 2019; Appendix D), the Project site is located within the Orange County Central and Coastal NCCP/HCP planning area but outside the boundaries of the NCCP/HCP Reserve System. The Reserve System boundary is located approximately 3,960 ft (0.75 mi) northeast of the proposed Project site. The Project site is in an area identified in the NCCP/HCP as urbanized and is located in an area designated for development. As described in the response to Threshold 4.4.6 in Section 4.4, Biological Resources, in this Draft EIR, development of the proposed Project would not result in the removal of any sensitive habitat species identified in the Orange County Central and Coastal NCCP/HCP. The proposed Project would not conflict with the Orange County

Central and Coastal NCCP/HCP. Therefore, the proposed Project would result in a less than significant impact related to conflict with the Orange County Central and Coastal NCCP/HCP, and no mitigation is required.

4.11.7 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use and planning. The cumulative impact area for land use for the proposed Project is the City of Lake Forest. Several development projects are approved and/or pending within the City. Table 4.A (refer to Chapter 4.0) lists adopted and planned projects within the City, and Figure 4.0.1, Related Project Locations, maps the locations of these projects. Each of these projects, as well as all proposed development in the City, would be subject to its own General Plan consistency analysis and would be reviewed for consistency with adopted land use plans and policies.

The City of Lake Forest is an urbanized area with a wide variety of established land uses. The land around the Project site has been developed with a variety of residential, business park, regional park/open space, commercial, and light industrial land uses. As previously stated, the Project site is designated for Business Park uses on the City's General Plan Land Use Map. However, the proposed Project would amend the General Plan to modify the land use designation of the Project site from Business Park to Low-Medium and Medium and High Density Residential, Public Facility, Community Park/Open Space, and Regional Park/Open Space to accommodate the proposed uses allowed under the Area Plan. The proposed Project also includes a Zone Change to Planned Community and the adoption of the Area Plan, which includes a Planned Community Program applicable to the Project site. Should the City Council approve the proposed Project, the proposed Project would be consistent with the City's General Plan and Zoning Code and cumulative land use impacts would be considered less than significant.

The proposed Project would include land uses that would be compatible with the surrounding neighborhoods and commercial areas and would replace the existing on-site nursery use. Therefore, the proposed Project would not contribute to a pattern of development that adversely impacts adjacent land uses or conflicts with existing on site or surrounding land uses.

There are no incompatibilities between the proposed Project and planned future projects in the City, which primarily include residential developments. As discussed previously, the proposed Project would not divide an established community; conflict with the SCAG 2016-2040 RTP/SCS or the City-adopted plans, policies, or zoning; or conflict with any NCCP/HCPs. All identified City-related projects would be reviewed for consistency with adopted land use plans and policies by the City. For this reason, the related projects are anticipated to be consistent with applicable General Plan and zoning requirements, or would be subject to allowable exceptions; further, they would be subject to CEQA, mitigation requirements, and design review. Therefore, the proposed Project would not contribute to a significant cumulative land use compatibility impact in the study area, and no mitigation is required.

4.11.8 Level of Significance Prior to Mitigation

The proposed Project would result in less than significant impacts related to land use and planning.

4.11.9 Regulatory Compliance Measures and Mitigation Measures

4.11.9.1 Regulatory Compliance Measures

There are no regulatory compliance measures applicable to land use.

4.11.9.2 Mitigation Measures

The proposed Project would not result in potentially significant impacts related to land use and planning, so no mitigation is required.

4.11.10 Level of Significance after Mitigation

No mitigation is required. The proposed Project would not result in potentially significant impacts related to land use and planning.

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4.12 NOISE

This section of the Environmental Impact Report (EIR) evaluates the potential noise impacts associated with construction and operation of the proposed Nakase Nursery/Toll Brothers Project (proposed Project). The analysis in this section is based on the information provided in the *Noise and Vibration Impact Analysis* (Urban Crossroads 2018a) prepared for the Project, which is included in Appendix J of this EIR.

4.12.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Seven comment letters included comments related to Noise.

- The letter from Southern California Edison (SCE) (August 14, 2018) suggests analysis of the noise impacts associated with project-related utility work.
- The letter from Loretta Herin (July 25, 2018) suggests the addition of a wall along Bake Parkway and installation of special pavement to reduce traffic noise at adjacent residents.
- The letter from the Saddleback Valley Unified School District (SVUSD) (July 25, 2018) requested that the EIR address environmental issues related to potential noise impacts to District schools and, specifically, potential noise impacts to the proposed school site from traffic traveling on Bake Parkway and Rancho Parkway.
- The letter from Andrea Alexander (August 6, 2018) expressed concern about existing truck and motorcycle noise on Bake Parkway and lack of noise ordinance enforcement. The commenter suggested triple-paned windows and a 10- to 12-foot (ft) wall to protect existing residents from additional traffic noise.
- The letter from Judy Esposito (August 6, 2018) expressed concern about potential increases in noise.
- The letter from the Autumnwood Homeowner's Association (HOA) (August 8, 2018) requested the EIR to evaluate noise impacts.
- The letter from Robert and Melissa Leech (August 9, 2018) stated that the existing daytime noise levels exceed 90 A-weighted decibels (dBA), and noise levels would be exacerbated as a result of the proposed Project. They also suggested a curfew on industrial traffic between 10:00 p.m. and 6:00 a.m., installation of a higher wall or landscaping to reduce traffic noise, and conducting a noise study to compare with the original environmental studies.

4.12.2 Existing Environmental Setting

4.12.2.1 Existing Project Site and Vicinity

The Project site is located southeast of Bake Parkway and southwest of Rancho Parkway in Lake Forest. State Route 241 (SR-241) is located roughly 300 ft northwest of the Project site. The Project site is currently occupied by the Nakase Brothers Wholesale Nursery, an agricultural wholesale plant nursery. Existing residential uses are located northwest of the Project site, and office and commercial uses are located northwest, northeast, southeast, and southwest of the Project site. The Serrano Creek Trail runs adjacent to the southeastern Project site boundary.

4.12.2.2 Existing Noise Levels

The ambient noise levels in the Project study area are dominated by transportation-related noise associated with the arterial roadway network. As described in Section 4.12.4, Methodology, eight 24-hour noise level measurements were taken at sensitive receiver locations in the vicinity of the Project site to determine existing noise levels in the vicinity of the Project site. The receiver locations are described in Table 4.12.A and are shown on Figure 4.12.1. The existing ambient noise levels are also detailed in Table 4.12.A. The daytime and nighttime average noise levels (L_{eq}) shown in this table represent the average of all hourly noise levels observed during the time periods. The median noise levels (L_{50}) represent the noise levels occurring 50 percent of the time. The 24-hour noise level is represented by the Community Noise Equivalent Level (CNEL), which is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours.

Table 4.12.A: Existing Noise Levels

Receiver No.	Distance to Project Site (ft)	Location	Average Noise Level (dBA L_{eq})		Average Noise Level (dBA L_{50})		24-hour Noise Level (CNEL)
			Daytime	Nighttime	Daytime	Nighttime	
L1	140	North of the Project site on Rancho Parkway adjacent to existing commercial uses	64.1	60.0	58.9	48.0	67.8
L2	115	East of the Project site adjacent to an existing pedestrian trail and an Extended Stay America hotel	54.4	50.1	50.8	42.8	57.8
L3	45	Southeast of the Project site at an adjacent pedestrian trail near existing office buildings on Lake Forest Drive	46.2	42.3	43.2	39.4	49.8
L4	0	Western Project site boundary adjacent to an existing parking lot for office uses	52.2	49.9	48.5	46.6	57.0
L5	151	Southwest of the Project site within an existing parking lot for office uses	50.0	48.4	47.0	46.1	55.3
L6	390	Northwest of the Project site near existing residential homes on Agave	46.7	43.8	43.9	41.8	51.1
L7	250	North of the Project site across Bake Parkway adjacent to an existing Staybridge Suites hotel	56.6	53.8	54.4	52.0	61.1
L8	0	Northwestern Project site boundary adjacent to Bake Parkway	75.1	71.5	69.5	56.0	79.0

CNEL = Community Noise Equivalent Level

L_{50} = median noise level

dBA = A-weighted decibels

L_{eq} = equivalent continuous noise level

ft = feet



FIGURE 4.12.1

LSA



SOURCE: Urban Crossroads

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Nakase Nursery/Toll Brothers
 Noise Measurement Locations

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4.12.3 Regulatory Setting

4.12.3.1 Federal Regulations

No federal regulations related to noise were used in the preparation of this analysis.

4.12.3.2 State Regulations

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element, which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). The purpose of the Noise Element is to limit the exposure of the community to excessive noise levels. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

The State of California's noise insulation standards are codified in the California Code of Regulations (CCR), Title 24, Building Standards Administrative Code, Part 2, and the California Building Code (CBC). These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures (e.g., residential buildings, schools, or hospitals) are developed near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

4.12.3.3 Regional Regulations

There are no regional regulations applicable to noise.

4.12.3.4 Local Regulations

City of Lake Forest General Plan. The City of Lake Forest has adopted a Safety and Noise Element of the General Plan to address public safety and quality of life issues. The Safety and Noise Element specifies the maximum exterior and interior noise levels for new developments impacted by transportation noise sources (e.g., arterial roads, freeways, airports, and railroads). In addition, the Safety and Noise Element identifies noise standards designed to protect, create, and maintain an environment free from noise that may jeopardize the health or welfare of sensitive receivers, or degrade quality of life.

The noise criteria identified in the City of Lake Forest Safety and Noise Element are guidelines to evaluate the land use compatibility of transportation-related noise (Table 4.12.B). The land use compatibility criteria provides the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels. The Noise/Land Use Compatibility Matrix in the City of Lake Forest General Plan provides guidelines to evaluate the acceptability of transportation-related noise-level impacts. These guidelines are based on the Governor's OPR and are used to assess the long-term traffic noise impacts on land uses. Noise-sensitive land uses such as

Table 4.12.B: Noise/Land Use Compatibility Matrix

Land Use Category	Community Noise Equivalent Level CNEL						
	55	60	65	70	75	80	
Residential – Single-Family, Multifamily, Duplex	A	A	B	C ¹	C		
Residential – Mobile Homes	A	A	B	C	C		
Transient Lodging – Motels, Hotels	A	A	B	B	C	C	
Schools, Libraries, Churches, Hospitals, Nursing/Convalescent Homes, Preschools, Day Care Centers (1) ²	A	A	B	C	C		
Auditoriums, Concert Halls, Amphitheaters, Meeting Halls	B	B	C	C			
Sports Areas, Outdoor Spectator Sports, Amusement Parks	A	A	A	B	B		
Playgrounds, Neighborhood Parks	A	A	A	B	C		
Golf Courses, Riding Stables, Cemeteries	A	A	A	A	B	C	C
Office and Professional Buildings	A	A	A	B	B	C	
Commercial Retail, Banks, Restaurants, Theaters	A	A	A	A	B	B	C
Industrial, Manufacturing, Utilities, Wholesale, Service Stations	A	A	A	A	B	B	B
Agriculture	A	A	A	A	A	A	A

Source: Table SN-3, City of Lake Forest General Plan, Safety and Noise Element (June 21, 1994).

- Zone A. Normally Acceptable**—Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
- Zone B. Conditionally Acceptable**—New construction or development should be undertaken only after detailed analysis of noise reduction requirement is made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air-conditioning, will normally suffice.
- Zone C. 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 the design.

Notes: (1) Religious institutions (Churches, synagogues, temples and other places of worship) of a small size (occupancy of 100 persons or less) may occupy existing buildings within areas of exterior noise levels ranging from 65 to 75 dB CNEL without providing additional noise insulation for the building.

(2) Shaded areas indicate new construction or development should generally not be undertaken. Source: J.J. Van Houten & Associates.

¹ General Plan Amendment 95-01, dated May 16, 1995.

² General Plan Amendment 94-01, dated July 11, 1995.

dB = decibels

dBA = A-weighted decibels

CNEL = Community Noise Equivalent Level

single-family homes and schools are considered normally acceptable with exterior noise levels below 60 dBA CNEL and are conditionally acceptable with noise levels below 65 dBA CNEL. For conditionally acceptable land use, new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.

The City provides exterior and interior noise level standards as shown in Table 4.12.C. These land use specific noise level standards are used to regulate transportation-related noise levels for noise sensitive uses.

Table 4.12.C: Interior and Exterior Noise Standards

Land Use	Noise Standards	
	Interior ¹	Exterior
Residential: Single-Family, Multifamily, Duplex, Mobile Home	45 dBA CNEL	65 dBA CNEL ²
Residential: Transient Lodging, Hotels, Motels, Nursing Homes, Hospitals	45 dBA CNEL	65 dBA CNEL
Private Offices, Church Sanctuaries, Libraries, Board Rooms, Conference Rooms, Theaters, Auditoriums, Concert Halls, Meeting Halls, etc.	45 dBA L _{eq} (12) ³	—
Schools	45 dBA L _{eq} (12)	67 dBA L _{eq} (12) ⁴
General Offices, Reception, Clerical, etc.	50 dBA L _{eq} (12)	—
Bank Lobby, Retail Store, Restaurant, Typing Pool, etc.	55 dBA L _{eq} (12)	—
Manufacturing, Kitchen, Warehousing, etc.	65 dBA L _{eq} (12)	—
Park, Playgrounds	—	65 dBA CNEL
Golf Courses, Outdoor Spectator Sports, Amusement Parks	—	70 dBA CNEL

Source: *Noise and Vibration Impact Analysis* (Urban Crossroads 2018a)

¹ Noise standard with windows closed. Mechanical ventilation shall be provided per Uniform Building Code requirements to provide a habitable environment. Indoor environment excludes bathrooms, toilets, closets, and corridors.

² Outdoor environment limited to rear yard of single-family homes, multifamily patios and balconies (with a depth of 6 ft or more), and common recreation areas.

³ Religious institutions (churches, temples, and other places of worship) of a small size (occupancy of 100 persons or less) may occupy existing buildings within areas of exterior noise levels ranging from 65 to 75 dBA CNEL without providing additional noise insulation for the building.

⁴ Outdoor environment limited to playground areas, picnic areas, and other areas of frequent human use.

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet/foot

L_{eq}(12) = the A-weighted equivalent sound level averaged over a 12-hour period (usually the hours of operation)

City of Lake Forest Municipal Code. To analyze noise impacts originating from a designated fixed location or private property such as the Project, stationary-source (operational) noise such as the proposed playgrounds, sports fields, outdoor pool/spa activities, a dog park, and school parking lot vehicle movements are typically evaluated against standards established under a jurisdiction’s Municipal Code. The Project operational noise impacts are governed by the City of Lake Forest Municipal Code, Title 11 – Peace and Safety, Division II – Offenses Against Public Peace, Chapter 11.16 – Noise Control. Section 11.16.040, Exterior Noise Standards, of the Municipal Code identifies the maximum permissible exterior noise levels for residential uses that shall be no greater than 55 dBA 7:00 a.m. to 10:00 p.m. and no greater than 50 dBA 10:00 p.m. to 7:00 a.m. for a period of 30 minutes. Further thresholds that are dependent on the duration of activity are described below.

In order to properly assess the impact of events at exterior residential property that occur for periods of time less than 30 minutes within a given hour, Section 11.16.040(B) provides the following noise level additions:

1. The noise standard for a cumulative period of more than 30 minutes in any hour; or
2. The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or
3. The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or
4. The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
5. The noise standard plus 20 dBA for any period of time.

If the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect that ambient noise level. If the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under the fifth category shall be increased to reflect the maximum ambient noise level. Additionally, In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by 5 dBA.

A summary of the exterior daytime and nighttime noise level standards are presented in Table 4.12.D below.

Table 4.12.D: Summary of Stationary-Source Noise Level Standards

Land Use	Time Period	Maximum Permissible Exterior Noise Levels ¹				
		L ₅₀ (30 min)	L ₂₅ (15 min)	L ₈ (5 min)	L ₂ (1 min)	L _{max} (Anytime)
Residential	Daytime (7:00 a.m.–10:00 p.m.)	55	60	65	70	75
	Nighttime (10:00 p.m.–7:00 a.m.)	50	55	60	65	70

Source: Sections 11.16.040(A) and (B) of the City of Lake Forest Municipal Code.

¹ The percent noise level is the level exceeded "n" percent of the time during the measurement period. List the noise level exceeded 25% of the time.

L_{max} = maximum instantaneous noise level

min = minutes

In regard to the regulation of construction noise impacts, the City’s Municipal Code, Section 11.16.060(H), exempts the following type of noise:

Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a legal City of Lake Forest holiday.

Noise from construction activities are typically limited to the hours of operation established under a city’s Municipal Code. However, both the City of Lake Forest Municipal Code and the City’s *CEQA Significance Thresholds Guide* (City of Lake Forest 2009) consider construction noise exempt from the Municipal Code stationary-source noise level standards (Section 11.16.060 of the Municipal Code), and do not establish a numeric maximum acceptable construction-source noise level threshold for potentially affected receivers, which would allow for a quantified determination of potential impacts under CEQA.

To evaluate whether the Project will generate potentially significant construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the *Criteria for Recommended Standard: Occupational Noise Exposure prepared by the National Institute for Occupational Safety and Health* (NIOSH). A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The construction-related noise level threshold starts at 85 dBA for more than 8 hours per day, and for every 3 dBA increase, the exposure time is cut in half. This results in noise level thresholds of

88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day.

For the purposes of this analysis, the lowest, more conservative construction noise level threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receiver locations. Since this construction-related noise level threshold represents the energy average of the noise source over a given time, they are expressed as L_{eq} noise levels. Therefore, the noise level threshold of 85 dBA L_{eq} over a period of 8 hours or more is used to evaluate the potential Project-related construction noise level impacts at the nearby sensitive receiver locations.

4.12.4 Methodology

Evaluation of noise and vibration impacts associated with the proposed Project included the following:

- Determination of the short-term construction noise and vibration impacts
- Determination of the long-term noise impact impacts resulting from off-site traffic and Project operation stationary sources
- Determination of the land use compatibility of the proposed Project as compared to the City's exterior and interior noise criteria

The evaluation of noise and vibration impacts was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the City of Lake Forest Safety and Noise Element and Municipal Code as well as the *Criteria for Recommended Standard: Occupational Noise Exposure prepared by the National Institute for Occupational Safety and Health (NIOSH)*. The Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108) was used to determine traffic noise impacts. Please refer to the *Noise and Vibration Impact Analysis (Urban Crossroads 2018a)* for additional details on the noise and vibration modeling methodology and assumptions used to estimate construction and operation impacts of the proposed Project.

4.12.4.1 Receiver Locations

To assess the potential for long-term operational and short-term construction noise impacts, the following receiver locations as shown on Figure 4.12.2, Sensitive Receptor Locations, were identified as representative locations for focused analysis. Land uses that are considered relatively insensitive to noise include commercial, and office developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, natural open space, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

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Sources: Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

- LEGEND:**
- Receiver Locations
 - Distance from receiver to Project site boundary (in feet)
 - Existing Barrier Height (in feet)
 - Existing Barrier

FIGURE 4.12.2

LSA



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Sensitive receivers near the Project site include existing homes, hotels, and the existing Serrano Creek Trail area, as described below. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this report would experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding by intervening structures.

- **R1:** Located approximately 197 ft north of the Project site, R1 represents existing residential north of Bake Parkway.
- **R2:** Location R2 represents the existing Staybridge Suites hotel, which is located roughly 264 ft north of the Project site across Bake Parkway.
- **R3:** Location R3 represents the existing Extended Stay America hotel, which is located approximately 216 ft southeast of the Project site on Lake Forest Drive.
- **R4:** Location R4 represents the existing Serrano Creek Trail area, which is located adjacent to the southern Project site boundary approximately 80 ft southeast.

4.12.5 Thresholds of Significance

The thresholds for noise impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The following thresholds were used to evaluate the potential noise impacts of the proposed Project:

Threshold 4.12.1: Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Threshold 4.12.2: Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

Threshold 4.12.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project area to excessive noise levels?

None of the thresholds for noise were scoped out in the Initial Study, which is included in Appendix A of this EIR. Therefore, all of the thresholds listed above are addressed in the following analysis.

4.12.5.1 City Significance Criteria Summary

According to the criteria presented above, noise and vibration impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4.12.E shows the significance criteria summary matrix.

Table 4.12.E: Significance Criteria Summary

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime ¹	Nighttime ²
Off-Site Traffic Noise	Noise- Sensitive	Exterior Noise Level Criteria	≥ 3 dBA CNEL Project Increase & Resulting With Project Noise Level > 65 dBA CNEL	
On-Site Traffic Noise	Residential & School	Exterior Noise Level Standard	65 dBA CNEL	
		Interior Noise Level Standard	45 dBA CNEL	
Operational Noise	Noise- Sensitive	Exterior Noise Level Standards	See Table 4.12.D.	
Construction Noise & Vibration	Noise- Sensitive	Noise Level Threshold	85 dBA L _{eq}	N/A
		Vibration Level Threshold (Building Damage)	0.3 in/sec PPV	N/A
		Vibration Level Threshold (Distinctly Perceptible)	0.04 in/sec PPV	N/A

¹ Daytime = 7:00 a.m. to 10:00 p.m.

² Nighttime = 10:00 p.m. to 7:00 a.m.

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

in/sec = inches per second

L_{eq} = equivalent continuous sound level

N/A = no nighttime construction activity is permitted, so no nighttime construction noise level limits are identified.

PPV = peak particle velocity

- **Off-Site Traffic Noise:** When both of the following criteria are met at noise-sensitive land uses (e.g., residential, hotels, motels, nursing homes, hospitals, parks, playgrounds and recreation areas, and schools):
 - Project traffic will cause a noise level increase of 3 dBA CNEL or more on a roadway segment adjacent to a noise-sensitive land use; and
 - The resulting “future with project” noise level exceeds the 65 dBA CNEL exterior noise level standard for sensitive land uses.
- **On-Site Traffic Noise:** If the on-site noise levels:
 - Exceed the exterior noise level standard of 65 dBA CNEL for outdoor areas (e.g., rear yard of single-family homes, multi-family patios and balconies (with a depth of 6 ft or more), common recreation areas, playgrounds, or picnic areas); or
 - Exceed an interior noise level of 45 dBA CNEL for noise-sensitive uses.
- **Operational Noise:** If Project-related operational (stationary source) noise levels exceed the noise level standards for sensitive land uses as presented in Sections 11.16.040(A) and (B) of the City of Lake Forest Municipal Code as well as in Table 4.12.D.
- **Construction Noise and Vibration:**
 - If Project-related construction activities create noise levels that exceed the 85 dBA L_{eq} acceptable noise level threshold at the nearby sensitive receiver locations; or
 - If Project-related construction activities generate vibration levels that exceed the California Department of Transportation (Caltrans) building damage vibration level threshold for older

residential structures of 0.3 inches per second (in/sec) peak particle velocity (PPV), or the *distinctly perceptible* human annoyance vibration level threshold of 0.04 in/sec PPV at nearby sensitive receiver locations.

4.12.6 Project Impacts

Threshold 4.12.1: Would the Project result in the 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?

Potentially Significant Impact.

Construction Noise Impacts. This section summarizes potential impacts resulting from the short-term construction activities associated with the development of the proposed Project. Based on the reference construction noise levels, the Project-related construction noise levels when the highest reference noise level is operating at the edge of primary construction activity nearest each sensitive receiver location would range from 53.3 to 65.2 dBA L_{eq} at the sensitive receiver locations, and therefore would not exceed the construction noise level threshold of 85 dBA L_{eq} at any receiver location. The noise impact due to unmitigated Project construction noise levels is, therefore, considered a less than significant impact at all receiver locations, and no mitigation is required.

Off-Site Traffic Noise Impacts. To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c). Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following scenarios:

- **Existing Conditions Without/With Project:** This scenario refers to the existing present-day noise conditions without and with the proposed Project.
- **Interim Year 2020 Without/With Project:** This scenario refers to Interim Year noise conditions without and with the proposed Project.
- **2040 General Plan With Approved Business Park Land Use Without Portola Extension Without/With Project:** This scenario refers to the ambient noise conditions at future Year 2040 without and with the proposed Project, and includes all cumulative projects identified in the Traffic Impact Analysis (TIA).
- **2040 General Plan With Approved Business Park Land Use With Portola Extension Without/With Project:** This scenario refers to the ambient noise conditions at future Year 2040 without and with the proposed Project, and includes all cumulative projects identified in the TIA.

Noise contours were used to assess the proposed Project's incremental traffic-related noise impacts at land uses adjacent to 39 study area roadway segments conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area.

The off-site traffic noise modeling shows conditions would range from 63.6 to 78.5 dBA CNEL and the proposed Project would generate noise level increases of 0.1 to 0.72 dBA CNEL on the study area roadway segments for all scenarios. The Project-related noise level increases are considered less than significant at the noise-sensitive land uses adjacent to roadways conveying Project traffic since they would not result in an exceedance of the 3 dBA CNEL increase criteria when the with Project noise level exceeds the 65 dBA CNEL noise level standard for sensitive land uses. No mitigation is required.

Off-Site Operational Noise Impacts. This section summarizes the potential operational noise impacts that may result from the Project's stationary noise sources on the off-site sensitive receiver locations. The hourly noise levels associated with the playgrounds, sports fields, outdoor pool/spa activities, a dog park, and school parking lot vehicle movements are expected to range from 17.9 to 32.5 dBA L₅₀ at the sensitive off-site receiver locations.

To demonstrate compliance with local noise regulations, the Project-only operational noise levels were evaluated against the exterior noise level threshold based on the City's exterior noise level standards. Table 4.12.F shows that the with Project operational noise levels would not exceed the City's daytime and nighttime exterior noise level standards at any receiver location, and therefore are considered a less than significant noise impact. No mitigation is required.

Table 4.12.F: Unmitigated Operational Noise Level Compliance

Receiver Location	Land Use	Noise Level at Receiver Locations (dBA)					Threshold Exceeded? ¹
		L ₅₀ (30 min)	L ₂₅ (15 min)	L ₈ (5 min)	L ₂ (1 min)	L _{max} (<1 min)	
Daytime	Residential	55	60	65	70	75	–
Nighttime	Standards	50	55	60	65	70	–
R1	Residential	17.9	21.2	25.8	30.1	46.1	No
R2	Hotel	27.1	31.0	36.2	40.1	58.0	No
R3	Hotel	27.3	31.0	35.5	39.1	55.8	No
R4	Recreation	32.5	35.6	39.3	42.6	55.5	No

¹ Refer to Table 4.12.D for operational noise level standards

dBA = A-weighted decibels

L_{max} = maximum instantaneous noise level

min = minutes

On-Site Noise Impacts. A noise impact analysis has been completed to determine the noise exposure levels that would result from adjacent and dominant traffic noise sources in the Project study area. The primary source of traffic noise affecting the Project site is anticipated to be from SR-241, Bake Parkway, Rancho Parkway, and Lake Forest Drive. The proposed Project would also experience some traffic noise impacts from the Project's internal local streets. Due to the low traffic volume and low speeds of vehicles traveling within the Project site, traffic noise from these roadways would not make a significant contribution to the noise environment beyond the right-of-way.

Exterior Noise Analysis. Using the FHWA traffic noise prediction model, the expected future exterior noise levels were calculated at the noise-sensitive residential and school uses within the Project site. The future exterior traffic noise levels are expected to range from 51.6 to 64.7 dBA CNEL at the outdoor areas (e.g., residential private yards and school playground and picnic areas) within the Project site with the planned 6 ft high noise barriers for residential uses. No exterior noise barriers are required to satisfy the City's 65 dBA CNEL exterior noise level standard at the school outdoor playground and picnic areas. With the planned noise barriers, the future exterior noise levels are considered to be a less than significant noise impact and no mitigation is required.

Interior Noise Analysis. To ensure that the interior noise levels comply with the City of Lake Forest interior noise level standards, future noise levels were calculated at the building façades.

Noise Reduction Assumptions. The interior noise level is the difference between the predicted exterior noise level at the building façade and the noise reduction of the structure. Typical building construction will provide a Noise Reduction (NR) of approximately 12 dBA with "windows open" and a minimum 25 dBA noise reduction with "windows closed." However, sound leaks, cracks and openings within the window assembly can greatly diminish its effectiveness in reducing noise. Several methods may be incorporated into the Project design in order to achieve required sound attenuation, including, but not limited to: (1) weather-stripped solid core exterior doors; (2) dual-glazed windows; (3) mechanical ventilation/air conditioning; and (4) exterior wall/roof assemblies free of cut-outs or openings.

Use of dual-paned windows is required by the CBC for energy conservation in new residential construction. In addition, all residential and school windows and exterior doors would have a minimum sound transmission class (STC) rating of 27 or higher. As required by the CBC, the proposed Project would install heating, ventilating, and air conditioning (HVAC) units in all residential units because window closure is a necessary condition to meet the interior noise exposure standard (refer to Regulatory Compliance Measure [RCM] NOI-1). In addition, roof sheathing would be per manufacturer's specification or caulked plywood of at least 0.5 inch thick, ceilings in residential and school uses would be per manufacturer's specification or well-sealed gypsum board of at least 0.5 inch thick, and insulation with at least a rating of R-19 would be used in the attic space to provide additional sound attenuation.

Interior Noise Level Assessment. The analysis shows that the buildings associated with the proposed Project would require a windows-closed condition and a means of mechanical ventilation (e.g. air conditioning) (refer to RCM NOI-1). The future exterior noise levels at the first-floor building façades are expected to range from 51.7 to 62.2 dBA CNEL. The first-floor interior noise level analysis shows that the City of Lake Forest 45 dBA CNEL residential and school interior noise level standard can be satisfied with incorporation of the design features described above (e.g., dual-pane windows with an STC rating of 27 or higher).

The future exterior noise levels at the second-floor building façades are expected to range from 56.9 to 69.2 dBA CNEL. The second-floor interior noise level analysis shows that the City's 45 dBA CNEL residential and school interior noise level standard can be satisfied by incorporation of the design features described above (e.g., dual-pane windows with an STC rating of 27 or higher). Therefore, impacts related to interior noise levels are anticipated to be less than significant, but a final noise study would be required to verify design and building performance. Mitigation Measure 4.12.1 requires that a final noise study be prepared prior to obtaining building permits for the Project. This report would utilize the precise grading plans, architectural floor plans and elevations, and actual building design specifications, and may include additional measures, if necessary, to ensure that the City's 45 dBA CNEL interior noise level standards are met.

Threshold 4.12.2: Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent localized effects. The proposed Project's construction activities most likely to cause vibration impacts are:

- **Heavy Construction Equipment:** Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to buildings, the vibration is usually short-term and is not of sufficient magnitude to cause building damage.
- **Trucks:** Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated using data published by the Federal Transit Administration (FTA). Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include mobile equipment activities and pile driving, among others. Using the vibration source level of construction equipment and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts.

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 ft. At distances ranging from 130 to 304 ft from primary Project construction activities, construction vibration velocity levels are expected to range from 0.002 to 0.008 in/sec PPV. Therefore, the Project construction vibration levels would remain below the Caltrans building damage threshold of 0.3 in/sec PPV at all receiver locations, and no mitigation is required.

Compared with the Caltrans construction vibration standard for human annoyance, the proposed Project construction activities would remain below the distinctly perceptible vibration standard of 0.04 in/sec PPV at all receiver locations. Therefore, Project-related vibration impacts at the nearby sensitive receiver locations would be less than significant, and no mitigation is required.

Additionally, the Project site would require up to 150,000 cubic yards (cy) of soil export during the construction process. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. When haul trucks are traveling to and from the project site along local roadways, typical vibration levels for the Nakase Property heavy truck activity at normal traffic speeds would approach 0.004 in/sec PPV at 25 ft based on the FTA *Transit Noise Impact and Vibration Assessment Manual*. This would be below the Caltrans building damage threshold of 0.3 in/sec PPV and human annoyance threshold of 0.04 in/sec PPV for the receptors along the surrounding roadways. No mitigation is required.

Once on site, trucks would be traveling at very low speeds so it is expected that delivery truck vibration levels at adjacent properties would approach 0.002 in/sec PPV at 25 ft and would remain well below the Caltrans building damage threshold of 0.3 in/sec PPV and human annoyance threshold of 0.04 in/sec PPV for all surrounding uses. No mitigation is required.

During operation, the proposed Project would not include any activities that would generate substantial ground-borne vibration or ground-borne noise. Therefore, operation of the proposed Project would not result in excessive ground-borne vibration or ground-borne noise levels, and no mitigation is required.

Threshold 4.12.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project area to excessive noise levels?

Less than Significant Impact. The closest airport to the Project site is John Wayne Airport, which is located approximately 11 miles (mi) northwest of the Project site. The Project site is not located within 2 mi of a public airport or within an airport land use plan nor is the Project within the vicinity of a private airstrip. As such, the Project site would not be exposed to excessive noise levels from airport operations; therefore, impacts are considered less than significant and no mitigation is required.

4.12.7 Cumulative Impacts

Less than Significant Impact. The off-site impacts related to noise and vibration are associated with off-site traffic. For the proposed Project, two scenarios for the Year 2040 conditions with the project were analyzed, the first being without the Portola Extension and the second with the Portola Extension.

For the first scenario, the 2040 General Plan With Approved Business Park Land Use Without Portola Extension with Project conditions would range from 65.6 to 78.5 dBA CNEL, and the proposed Project would generate a noise level increase of up to 0.1 dBA CNEL on the study area roadway segments. The Project-related noise level increases are considered less than significant under 2040 General Plan With Approved Business Park Land Use Without Portola Extension with Project conditions at the noise-sensitive land uses adjacent to roadways conveying Project traffic because they would not result in an increase of 3 dBA CNEL when the with Project noise level exceeds the 65 dBA CNEL noise level standard for sensitive land uses. No mitigation is required.

For the second scenario, the 2040 General Plan With Approved Business Park Land Use With Portola Extension with Project conditions would range from 65.6 to 78.5 dBA CNEL, and the proposed Project would generate a noise level increase of up to 0.2 dBA CNEL on the study area roadway segments. The Project-related noise level increases are considered less than significant under 2040 General Plan With Approved Business Park Land Use With Portola Extension with Project conditions at the noise-sensitive land uses adjacent to roadways conveying Project traffic because they would not result in an increase of 3 dBA CNEL when the with Project noise level exceeds the 65 dBA CNEL noise level standard for sensitive land uses. No mitigation is required.

4.12.8 Level of Significance Prior to Mitigation

The following potential noise impacts would be less than significant prior to mitigation: (1) general construction activities; (2) long-term traffic-related noise impacts to off-site uses; (3) long-term off-site stationary source noise impacts from on-site uses; (4) long-term traffic related noise impacts to proposed exterior on-site uses; (5) vibration; and (6) noise associated with aircraft and airport operations. Impacts related to interior noise levels would be potentially significant and mitigation is required.

4.12.9 Regulatory Compliance Measures and Mitigation Measures

4.12.9.1 Regulatory Compliance Measures

RCM NOI-1 Ventilation Requirements. Prior to the issuance of building permits, documentation shall be provided to the City of Lake Forest Director of Community Development, or designee, demonstrating that Project buildings meet ventilation standards required by the CBC with the windows closed. It is likely that a form of mechanical ventilation, such as an air-conditioning system, will be required as part of the Project design for all on-site buildings/units.

4.12.9.2 Mitigation Measures

Mitigation Measure 4.12.1 **Final Acoustical Study.** Prior to issuance of the first~~any~~ building permits, the Project Applicant/Developer shall submit a final acoustical study, prepared by a qualified acoustical consultant, to the City of Lake Forest. The Director of Community Development of the City of Lake Forest, or designee, shall verify that the final acoustical study demonstrates that all residential units will comply with the City's interior noise standard (45 dBA CNEL). Noise reduction techniques will be incorporated into construction plans in order to reduce interior noise levels. These techniques include, but are not limited to, weather-stripped solid core exterior doors, dual glazed windows with a minimum sound transmission class rating of 27, and/or exterior wall/roof assemblies free of cut-outs or openings.

4.12.10 Level of Significance after Mitigation

With implementation of Mitigation Measure 4.12.1, all potential impacts related to noise would be less than significant.

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4.13 POPULATION AND HOUSING

This section describes the existing population and housing characteristics of Lake Forest and Orange County and evaluates the potential impacts of the proposed Nakase Nursery/Toll Brothers Project (proposed project) on population, housing, and employment growth. This section is based on sources of demographic information provided by various agencies, including the Southern California Association of Governments (SCAG), the City of Lake Forest (City) General Plan's Housing Element (2014), the California Department of Finance, and the United States Census Bureau.

Lake Forest and Orange County demographic information was used to describe the existing population, housing, and employment characteristics in Lake Forest and Orange County. SCAG projections for these topics were identified for the existing conditions and project build out. City of Lake Forest (City) goals and policies regarding population and housing were used to evaluate potential impacts that could result from implementation of the proposed Project.

4.13.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). (For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report [EIR].) Two comment letters included comments related to population and housing.

The letter from SCAG (dated August 15, 2018) expressed concern with including appropriate demographics and growth forecast data. The letter from Judy Esposito (dated August 6, 2018) expressed concern regarding the potential population increase in Lake Forest due to the proposed Project.

4.13.2 Existing Environmental Setting

4.13.2.1 Population, Housing, and Employment Trends in the City and County

Lake Forest is characterized by urban areas, including single-family, multifamily, and mobile home residential uses and concentrations of commercial, office, and industrial uses. Lake Forest also contains several regional and community parks and open space.

In its existing condition, the 122-acre (ac) Project site is currently operating as the Nakase Brothers Wholesale Nurseries, an agricultural wholesale plant nursery that employs 100 to 249 employees.¹ The project site does not contain any residential uses and therefore does not contain any population or housing.

Lake Forest and Orange County are located within the SCAG planning area, which encompasses a population exceeding 19 million residents in an area of more than 38,000 square miles. SCAG is a

¹ California Employment Development Department. Employer Details, Nakase Brothers Wholesale Nursery. Website: <https://www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/empDetails.aspx?menuChoice=emp&empid=980686893&geogArea=0604000059> (accessed June 6, 2019).

federally designated Metropolitan Planning Organization (MPO)¹ encompassing six counties (i.e., Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties) and 191 cities. In 2016, the SCAG Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Final Growth Forecast by Jurisdiction (SCAG 2016b) to predict the most likely growth scenario for the Southern California region in the future. The SCAG RTP/SCS Growth Forecast is meant to provide a common foundation for regional and local planning, policymaking, and infrastructure provisions within the SCAG region.

The growth forecast for Orange County and Lake Forest in the SCAG RTP/SCS Growth Forecast is provided in Tables 4.13.A and 4.13.B. These projections are used as a reference point for discussing population and housing growth throughout this section.

Table 4.13.A: SCAG Population, Households, and Employment Forecasts for Orange County (2012–2040)

Year	Population	Households	Employment
2012	3,071,600	999,500	1,526,500
2020	3,271,100	1,074,700	1,730,400
Percent Change (2012–2020)	6.5%	7.5%	13.4%
2035	3,431,200	1,135,300	1,870,500
Percent Change (2012–2035)	11.7%	13.6%	22.5%
2040	3,461,500	1,152,300	1,898,900
Percent Change (2012–2040)	12.7%	15.3%	24.4%

Source: 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction (SCAG 2016b). Website: http://www.scag.ca.gov/Documents/2016_2040RTPSCS_FinalGrowthForecastbyJurisdiction.pdf (accessed May 15, 2019).
RTP = Regional Transportation Plan SCS = Sustainable Community Strategy
SCAG = Southern California Association of Governments

Table 4.13.B: SCAG Population, Households, and Employment Forecasts for Lake Forest (2012–2040)

Year	Population	Households	Employment
2012	78,500	26,300	39,200
2020	90,700	30,300	44,700
Percent Change (2012–2020)	15.5%	15.2%	14.0%
2035	90,800	30,400	48,700
Percent Change (2012–2035)	15.7%	15.6%	24.2%
2040	90,700	30,500	49,000
Percent Change (2012–2040)	15.5%	16.0%	25.0%

Source: 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction (SCAG 2016b). Website: http://www.scag.ca.gov/Documents/2016_2040RTPSCS_FinalGrowthForecastbyJurisdiction.pdf (accessed May 15, 2019).
RTP = Regional Transportation Plan SCS = Sustainable Community Strategy
SCAG = Southern California Association of Governments

¹ An MPO is a federally mandated and federally funded transportation policymaking organization that is made up of representatives from local government and governmental transportation authorities. In 1962, the United States Congress passed legislation that required the formation of an MPO for any urbanized area with a population greater than 50,000.

Population. As shown in Tables 4.13.A and 4.13.B, according to the 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction (SCAG 2016b), the Lake Forest’s population is anticipated to grow by approximately 15.5 percent between 2012 and 2020, and Orange County’s population is expected to grow by 6.5 percent between 2012 and 2020 (approximately 0.8 percent and 1.9 percent per year, respectively). Lake Forest’s population is anticipated to increase by approximately 15.7 percent by 2035 and 15.5 percent by 2040 from the 2012 population of 78,500 persons. This indicates that the population in Lake Forest is anticipated to decline slightly from 2035 to 2040. Orange County’s population is anticipated to increase by approximately 11.7 percent by 2035 and 12.7 percent by 2040 from the County’s 2012 population of 3,071,600 persons, thereby showing an anticipated steady increase in population from the base year.

Age Characteristics. A city’s age distribution often shapes its housing demand. According to the City of Lake Forest General Plan Housing Element (2014), different age groups require different accommodations based on lifestyle, family type, income level, and housing preference. Table 4.13.C provides a comparison of Lake Forest’s and Orange County’s population by age group using data from the 2013–2017 American Community Survey (ACS) 5-year estimate. As shown in Table 4.13.C, Lake Forest and Orange County have similar proportions of residents in each age group. The largest difference between Lake Forest and Orange County is in the 45 to 64 years age group (29.6 percent and 26.4 percent, respectively). The largest portion of the population for Lake Forest belongs in the 45 to 64 years age group, and the largest portion of the population for Orange County belongs in the 25 to 44 years age group. The median age of Lake Forest is also about 1.5 years higher than that of Orange County, suggesting that the population of Lake Forest is slightly older overall than that of Orange County.

**Table 4.13.C: Lake Forest and Orange County
Age Characteristics**

Age Group	Lake Forest		Orange County	
	Persons	Percentage	Persons	Percentage
Under 18 Years	18,144	22.2%	716,767	22.7%
18 to 24 Years	6,831	8.3%	306,891	9.7%
25 to 44 Years	22,533	27.5%	869,275	27.6%
45 to 64 Years	24,137	29.6%	836,438	26.4%
65 and Over	10,167	12.4%	426,445	13.5%
Total	81,812	100.0%	3,155,816	100.0%
Median Age	39.0		37.5	

Source: United States Census Bureau. Table S0101, American Community Survey 2013–2017 5-Year Estimate. Website: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S0101&prodType=table (accessed May 21, 2019).

Households.¹ As shown in Tables 4.13.A and 4.13.B, Lake Forest’s number of households is anticipated to grow by 15.2 percent and Orange County’s number of households is anticipated to grow by 7.5 percent between 2012 and 2020 (approximately 1.9 percent and 0.9 percent per year,

¹ The Southern California Association of Governments forecasts “households” not housing units. As defined by the United States Census Bureau, “households” are equivalent to occupied housing units.

respectively). Lake Forest's number of households is anticipated to increase by approximately 15.6 percent by 2035 and 16.0 percent by 2040 from the 2012 number of households of 26,300. Orange County's number of households is anticipated to increase by approximately 13.6 percent by 2035 and 15.3 percent by 2040 from the 2012 number of 999,500 households.

Employment. As shown in Tables 4.13.A and 4.13.B, according to the 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction (SCAG 2016b), employment in Lake Forest is anticipated to grow by approximately 14 percent between 2012 and 2020, and employment in Orange County is expected to grow by 13.4 percent between 2012 and 2020, representing an increase of approximately 1.7 percent per year for both. The employment in Lake Forest is anticipated to increase by approximately 24.2 percent by 2035 and 25.0 percent by 2040 from the 2012 estimated employment of 39,200 employees. Orange County's estimated employment is anticipated to increase by approximately 22.5 percent by 2035 and 24.4 percent by 2040 from the County's 2012 employment of 1,526,500 employees. These growth projections suggest that employment is expected to grow steadily from 2012 to 2040 in both Lake Forest and Orange County.

As of April 2019, Lake Forest had a labor force of 48,000, and Orange County had a labor force of 1,605,600, with approximately 1,200 and 41,600 people unemployed, respectively.¹ The April 2019 unemployment rate was 2.4 percent for Lake Forest and 2.6 percent for Orange County.² As of April 2019, construction employment in Orange County was 104,200. This is similar to construction employment in recent years (105,300 employees in April 2018 and 105,400 employees in April 2017).³ Construction in Orange County is approximately 13 percent above Orange County's 10-year construction employment average from April 2009 to April 2019 (90,486 construction jobs).⁴

Jobs/Housing Balance. Jobs/housing balance is a regional concept that encourages the designation and zoning of sufficient vacant land for residential uses with appropriate standards to ensure that adequate housing is available to serve the needs derived from the local employment base. The jobs-to-housing ratio can be used as the general measure of balance between a community's employment opportunities and the housing needs of its residents. Theoretically, a city's jobs/employment ratio (jobs to employed residents) would be 1:1 if the number of jobs in the city equaled the number of employed residents. However, assuming a simple ratio of one job to one household is inappropriate in modern economies that have many households with more than one person in the workforce. According to SCAG's *The New Economy and Jobs/Housing Balance in Southern California (2001)*, a balance between jobs and housing in a metropolitan region can more appropriately be defined as a provision of an adequate supply of housing to house workers employed in a defined area (i.e., subregion or community)..

¹ Monthly Labor Force Data for Cities and Census Designated Places, Orange County, April (California Employment Development Department 2019b). Website: <https://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html#CCD> (accessed June 6, 2019).

² Ibid.

³ California Employment Development Department. 2019a. Industry Employment—Official Estimates, Anaheim-Santa Ana-Irvine Metropolitan Division (Orange County), 2000–Present. Website: <https://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html> (accessed June 6, 2019).

⁴ Ibid.

The City of Lake Forest General Plan Public Facilities/Growth Management Element (1994a) outlines the need to improve the jobs/housing balance as one of nine major issues to be addressed by the goals and policies contained therein. The City has been developed primarily with residential uses and some commercial and service sector uses. Lake Forest and the surrounding subregions are considered “housing rich,” and many residents drive to other parts of Orange County or neighboring counties for employment.

SCAG applies the jobs-to-housing ratio at the regional and subregional level as a tool for analyzing the fit between jobs, housing, and infrastructure. The American Planning Association (APA) is an authoritative resource for community-planning best practices, including recommendations for assessing jobs-to-housing ratios. The APA recognizes that an ideal jobs-to-housing ratio will vary from jurisdiction to jurisdiction. In general, the recommended target for an appropriate jobs-to-housing ratio is 1.5, with a recommended range of 1.3 to 1.7 (Weitz 2003).

Lake Forest is currently within the jobs-to-housing ratio range recommended by the APA. According to the 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction (SCAG 2016b), Lake Forest had a jobs-to-housing ratio of 1.5 in 2012 and is projected to have a jobs-to-housing ratio of 1.5 in 2020 and 1.6 in 2035 through 2040. The increase in the jobs-to-housing ratio suggests that the job growth expected in the region will be larger than the expected growth in housing.

4.13.3 Regulatory Setting

4.13.3.1 Regional Regulations

Southern California Association of Governments. As the designated MPO for the six-county subregion that includes Orange County, SCAG prepares several plans to address regional growth, including the RTP/SCS. The regional growth forecasts undertaken by SCAG are developed for three planning horizons: 2020, 2035, and 2040. SCAG is mandated by federal and State law to research and draw up plans for transportation, growth management, hazardous waste management, and a regional growth forecast that is the foundation for these plans and regional air quality plans developed by the South Coast Air Quality Management District (SCAQMD). SCAG prepares several plans to address regional growth, including the Regional Comprehensive Plan and Guide, Regional Housing Needs Assessment (RHNA), the Regional Transportation Plan (RTP), the Regional Transportation Improvement Program (RTIP), and the annual State of the Region reports to measure progress toward achieving regional planning goals and policies.

Regional Comprehensive Plan. The Regional Comprehensive Plan (RCP), prepared by SCAG to address regional growth, was adopted in 2008 by the member agencies of SCAG. The RCP sets broad goals for the Southern California region and identifies strategies for local and regional agencies to guide their decision-making process. The RCP provides strategies for local governments to address issues related to future growth within a regional context. The RCP is provided to local governments for their voluntary use when preparing local plans and handling local issues of regional importance.

The current RCP incorporates and summarizes the SCAG Compass Growth Vision and the 2% Strategy adopted by the Regional Council in April 2008. The recommendations made in the RCP call

for infrastructure and resource activities consistent with the envisioned growth pattern. The policies in the RCP attempt to reduce emissions and increase mobility through strategic land use changes.

The majority of the RCP goals and policies are applicable to SCAG and the local governments and are not applicable at the individual project level. However, the following RCP/Compass Blueprint land use and housing strategies are applicable to the proposed Project:

- Focusing growth in existing and emerging centers and along major transportation corridors
- Injecting new life into underused areas by creating vibrant new business districts, redeveloping old buildings, and building new businesses and housing on vacant lots

Regional Transportation Plan/Sustainable Communities Strategy. The 2013–2035 RTP/SCS was adopted on April 7, 2016. The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The Plan charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The long-term vision will address regional transportation and land use challenges and opportunities.

The RTP/SCS includes:

- Visions, policies, and performance measures
- Forecasts (e.g., population, households, employment, land use, and housing needs)
- A financial plan
- A list of projects (to be initiated and/or completed by 2040)
- An analysis of priority focus areas (e.g., goods movement and active transportation)

Regional Growth Forecast. The regional growth forecasts undertaken by SCAG are developed in 5-year increments through 2040. The projected growth in population, household, and employment is the data relied upon during development of SCAG’s RTP, Sustainable Communities Strategy (SCS), and RHNA. Consistency with the growth forecast at the subregional level is one criterion that SCAG uses in exercising its federal mandate to review “regionally significant” development projects for conformity with regional plans.

Regional Housing Needs Assessment. Local jurisdictions are required by State law (Government Code Section 65580 et seq.) to plan for their fair share of projected housing construction needs in their region. Housing unit construction goals are set by the State Department of Housing and Community Development and allocated to cities through regional planning agencies such as SCAG. This is called the RHNA. Future housing need refers to the proportion of the region’s future housing needs allocated to a community. Each jurisdiction’s future housing need is calculated in terms of four factors: (1) the number of units needed to accommodate forecast global household growth; (2) the number of units needed to replace demolition due to attrition in the housing stock (i.e., fire damage, obsolescence, redevelopment, and conversion to nonhousing uses); (3) maintenance of an ideal vacancy rate for a well-functioning housing market; and (4) an adjustment to avoid an overconcentration of lower-income households in any one jurisdiction.

The RHNA prepared by SCAG defines the housing unit construction goals for the region. The City’s fair share for the planning period between January 1, 2014, and October 1, 2021, (the last adopted RHNA period) was established by SCAG at 2,727 units. The RHNA target number was based on projected household growth and the resulting need for construction of additional housing units allocated over a 5- to 7-year planning period (2014–2021). This 2,727-unit share was divided into the following income groups according to median family income (MFI):

Income Level	Percentage of Area MFI	No. of Units
Very Low	0–50%	647
Low	51–80%	450
Moderate	81–120%	497
Upper	>120%	1,133

MFI = median family income

Each jurisdiction is required to create an annual report on the status and progress in implementing the housing element of its general plan using forms and definitions adopted by the California Department of Housing and Community Development (HCD). The most recent, available Annual Progress Report (APR) summary for Lake Forest is the 2017 APR. As of December 2017, 2,588 units had been permitted in Lake Forest, which reduced the RHNA unit requirement to 1,393 overall. Table 4.13.D shows a summary of the 5th Cycle APR data received by the HCD up to the 2017 APR. As shown in Table 4.13.D, although 2,588 housing units were permitted, 1,133 units were in excess of RHNA requirements in the Above Moderate-Income category. There have been no Very Low-Income or Low-Income housing units permitted in the 2014–2021 planning period.

Table 4.13.D: Remaining Regional Housing Needs in the City of Lake Forest

	Very Low-Income	Low-Income	Moderate-Income	Above Moderate-Income	Total
Fair Share Housing Allocation	647	450	497	1,133	2,727
Building Permits	0	0	201	2,387	2,588
Remaining Units	647	450	296	0	1,393

Source: California Department of Housing and Community Development. Annual Progress Report Permit Summary—Pivot Table with 5th Cycle Summary Data. Website: http://www.hcd.ca.gov/community-development/housing-element/docs/Annual_Progress_Report_Permit_Summary.xls (accessed December 2018).

4.13.3.2 Local Regulations

City of Lake Forest General Plan Housing Element. The Housing Element is required by California State law to be a component of every city’s General Plan because housing needs are recognized as a statewide concern. As such, the Housing Element of a jurisdiction’s General Plan is the only element that is subject to approval by the State. Pursuant to State law, the Housing Element must identify the city’s housing needs, the sites that can accommodate these needs, and the policies and programs to assure that the housing units necessary to meet these needs can be provided. The primary goal of the Housing Element is to provide a range of housing opportunities for all income groups.

In January 2014, the 2013–2021 Housing Element was adopted as a guide for housing within Lake Forest. The Housing Element provides an indication of the need for housing in the community in terms of housing affordability, availability, adequacy, and accessibility. The Housing Element also provides a strategy to address housing needs and identifies a series of specific housing programs to meet community needs. The following goals are found in the City’s Housing Element:

- **Goal 1.0:** Adequate housing to meet the existing and future needs of Lake Forest residents
- **Goal 2.0:** Maintenance and enhancement of the quality of existing residential neighborhoods.
- **Goal 3.0:** Increased opportunities for home ownership.
- **Goal 4.0:** Promote equal opportunity for all residents to reside in housing of their choice.

The Housing Element also contains objectives, policies, and programs that are intended to formulate the City’s approach to pursuing the production, preservation, and rehabilitation of housing units and to meeting its goals outlined above.

4.13.4 Methodology

Although the City of Lake Forest’s 2017 *Local Guidelines for Implementing the California Environmental Quality Act (CEQA)* and 2009 *CEQA Significance Thresholds Guide* do not outline requirements specific to the Population and Housing section analysis of an EIR, the City of Lake Forest 2017 CEQA Guidelines states that EIRs must contain the following:

- A description of the direct and indirect significant environmental impacts of the proposed project explaining which, if any, can be avoided or mitigated to a level of insignificance, indicating reasons that various possible significant effects were determined not to be significant and denoting any significant effects which are unavoidable or could not be mitigated to a level of insignificance. Direct and indirect significant effects shall be clearly identified and described, giving due consideration to both short-term and long-term effects.
- An analysis of the growth-inducing impacts of the proposed action. The discussion should include ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.
- A discussion of any significant, reasonably anticipated future developments and the cumulative effects of all proposed and anticipated action.
- A discussion of any economic or social effects, to the extent that they cause or may be used to determine significant environmental impacts.
- A statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and, therefore, were not discussed in the EIR.

These requirements are relevant for the purposes of this analysis.

Population and housing growth are examples of economic and social changes. Although socioeconomic information and impact analysis play a role in environmental impact assessment

under CEQA, social and economic changes resulting from a project are not treated as significant effects on the environment (*State CEQA Guidelines* Section 15064e). Pursuant to Section 15064e, socioeconomic data have four principal uses under CEQA:

- Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment.
- If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant.
- Evidence of economic and social impacts that do not contribute to or are not caused by physical changes in the environment is not substantial evidence that the project may have a significant effect on the environment.

Lake Forest and Orange County demographic information was used to describe the existing population, housing, and employment characteristics in Lake Forest and Orange County. SCAG projections for these topics were identified for the existing conditions and project built out. City goals and policies regarding population and housing were used to evaluate potential impacts that could result from implementation of the proposed Project.

4.13.5 Thresholds of Significance

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

Threshold 4.13.1: 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)

Threshold 4.13.2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

The Initial Study, included as Appendix A, substantiates that there would be no impacts associated with Threshold 4.13.2. These thresholds will not be addressed in the following analysis.

4.13.6 Project Impacts

Threshold 4.13.1: Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact.

Direct Growth. The proposed Project involves a General Plan Amendment and Zone Change to establish the Nakase Property Area Plan. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable-housing units on the Project site. Because the Project site was previously designated by the City's General Plan as Business Park and Business Development Overlay (BDO), residential uses were not envisioned on the Project site. Therefore, any population and housing growth anticipated as a result of the Project is not previously assumed in the City's General Plan.

The 2010 United States Census estimates that the average household size in Lake Forest was 2.93 persons per household.¹ Based on that estimate, the proposed 101 senior affordable-housing units of the senior residential community and the 675 single-family residential units would generate a total of approximately 2,274 residents.

As shown in Table 4.13.B, SCAG projects that Lake Forest's population will increase by 12,200 from 2012 to 2020, by 12,300 by 2035, and by 12,200 by 2040, and the number of households will increase by 4,000 from 2012 to 2020, by 4,100 by 2035, and by 4,200 by 2040. Because housing was not anticipated on the Project site, the proposed Project would increase the population by approximately 2,274 net new residents and the number of housing units by 776 net new dwelling units not previously assumed in the 2012 SCAG projections. The estimated increase in population from the proposed Project accounts for a 2.5 percent increase over Lake Forest's projected population growth through 2040 and a 2.5-percent increase over the Lake Forest's household growth through 2040.

According to the California Department of Finance Demographic Research Unit (May 2019), Lake Forest's estimated population was 86,346 in January 2019; the addition of 2,274 residents represents an increase of approximately 2.6 percent. The estimated number of households in the Lake Forest was 30,035 in January 2019, and the addition of 776 housing units would represent an increase of approximately 2.6 percent. Therefore, while the proposed Project would result in population growth, the growth attributable to the proposed Project would not be substantial in relation to the current conditions in Lake Forest or the projected conditions of Lake Forest.

The addition of new affordable-housing units also supports the affordable-housing goals of the City. Policy 1.8 of the City's General Plan Housing Element encourages residential developments to incorporate a minimum of 15 percent affordable units, including units affordable to extremely low-income households. The City implements this policy by requiring the preparation of an Affordable Housing Implementation Plan (AHIP). The AHIP, which is included in the Development Agreement between the Applicant and the City, must demonstrate how the project complies with the City's Affordable Housing Point System by meeting certain affordable-housing production requirements. The Affordable Housing Point System awards "points" for each affordable unit provided on site. Additional points are awarded if the units are made available as rental units for very low- or low-income households (points are weighted toward

¹ US Census Bureau, (2010) 2010 Demographic Profile Data. Table DP-1

production of very low-income units). Two-bedroom and second units receive additional points. Based on the total number of market rate housing units proposed for the Project site (675), the Applicant will be required to achieve 101 points (an amount equal to 15 percent of the total number of market-rate units approved as part of the Project) under the City's Affordable Housing Point System. The production of affordable housing units pursuant to the AHIP process will help the City meet its RHNA requirements. As shown in Table 4.13.D, there is a need for more very low-income, low-income, and moderate-income housing units in Lake Forest to meet the fair share housing allocations under the RHNA 5th Cycle (2014–2021). The 101 senior affordable-housing units proposed as part of this project will help the City meet requirements in the Very Low-Income and Low-Income categories.

Therefore, the proposed Project's direct impact on population growth would be less than significant, and no mitigation would be required.

Indirect Growth.

Construction. Commencement of construction activities on the Project site would require that nursery operations on the Project site cease, which would result in the displacement of up to 249 employees currently employed by the Nakase Brothers Wholesale Nursery. Given the low unemployment rate in the region (as of April 2019, the County's unemployment rate was 2.6 percent), it is anticipated that workers would find employment elsewhere.¹

Construction of the proposed Project would provide short-term jobs over an estimated period of 67 months (approximately 5.5 years). Construction activities required include demolition and site preparation, grading, paving and infrastructure, and building construction. Many of the construction jobs would be temporary or seasonal and would be specific to the variety of construction activities. This workforce would include a variety of craftspeople, such as cement finishers, ironworkers, welders, carpenters, electricians, painters, and laborers. Although the proposed Project would increase the number of employees at the Project site, none of these construction employees are expected to relocate, thereby creating a permanent increase in population or an increased demand for housing in the vicinity of the Project site. Permanent population and housing growth is not anticipated as a result of construction of the proposed Project because of the following:

- The work requirements of most construction projects are highly specialized, so construction workers remain at a job site only for the time frame in which their specific skills are needed to complete a particular phase of the construction process. For this reason, construction workers typically commute to individual job sites that may change several times a year.
- The supply of general construction labor in the region has been stable over recent years and is 13 percent above the County's 10-year average, suggesting a well-functioning

¹ Labor Force Data for Cities and Census Designated Places, Orange County, April 2019 (California Employment Development Department 2019b). Website: <https://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html#CCD> (accessed June 6, 2019).

construction job market and available regional labor pool. Therefore, it is expected that local and regional construction workers would be available to serve the proposed Project.

Project-related construction workers would not be expected to relocate their household's place of residence as a consequence of working on the proposed Project; therefore, the proposed Project would not be expected to induce substantial population growth or demand for housing through increased construction employment.

Operation. An elementary school is proposed on the Project site, which would accommodate up to 1,000 students from kindergarten through sixth grade. The proposed school is expected to employ 60 workers. Due to the limited number of jobs induced and the available labor pool within Lake Forest and the region, the proposed Project would cause few, if any, people to move or relocate to the area solely for the purpose of being close to the Project site for employment. Therefore, although the proposed Project would provide employment opportunities, the proposed Project would not result in substantial indirect growth or create a significant demand for housing in the Project site vicinity.

Furthermore, the proposed Project would be located within a developed area of Lake Forest that is already served by all utilities. The proposed Project would include some roadway widening and the construction of collector streets, as well as infrastructure improvements (e.g. water, sewer service, utilities, and drainage system) to and within the project site (see sections 4.16, Transportation, and 4.18, Utilities). However, these roadway and other infrastructure improvements would not induce additional population growth because they would only serve Project residents, visitors, and employees and would not provide additional infrastructure capacity for other projects.

As a result, the development of the proposed Project would not indirectly induce substantial population growth, and the indirect impact would be less than significant. No mitigation would be required.

Jobs/Housing Balance. The proposed Project would result in the construction of 776 housing units and the generation of approximately 60 jobs on the Project site. As discussed above, the SCAG forecasts show the jobs-to-housing ratio in Lake Forest was approximately 1.5 in 2012 and that it is expected to increase to 1.6 in 2035 and 2040. The 776 housing units proposed by the Project would result in a 2.5 percent increase over SCAG's projected housing growth in Lake Forest. The proposed Project would cause nursery operations on the Project site to cease, which would result in the displacement of up to 249 employees currently employed by the Nakase Brothers Wholesale Nursery. Given the region's low unemployment rate, it is anticipated that workers would find employment elsewhere. Therefore, although the Project may negatively affect the City's jobs-to-housing ratio by adding a greater number of residential units than job opportunities, the change would not be significant because Lake Forest is situated in a job-rich region and is located adjacent to Irvine, which has an especially high jobs-to-housing ratio of

2.48.¹ Impacts resulting from the proposed Project related to the job-housing balance would be less than significant, and no mitigation would be required.

4.13.7 Cumulative Impacts

The purpose of this section is to evaluate any additional incremental impact that the proposed Project is likely to cause over and above the combined impacts of recently approved and proposed projects in Lake Forest and its sphere of influence. The impact area used to assess potential cumulative population and housing impacts is Lake Forest because the proposed project would affect population, housing, and employment within Lake Forest. The implementation of the proposed Project in conjunction with the 11 proposed projects identified in Table 4.13.E below would contribute to population and housing growth in the project vicinity. The related projects include 908 residential units that would all be constructed in Lake Forest. The US Census estimates the average housing size in Lake Forest to be 2.93 persons per household. Based on Lake Forest’s average household size, the combined construction of the proposed residential units and related residential units would yield a total of approximately 4,934 new residents (2,274 residents [proposed Project] + 2,660 residents [related projects]) and a total of approximately 1,684 new housing units (776 units [proposed Project] + 908 units [related projects]).

Table 4.13.E: City of Lake Forest Related Projects Population and Employment Projections

Related Project No.	Land Use	Size	Generation Rate	Total Population	Total Employees
1	Private Recreation	2 ac	8.25 empl/ac	-	17
2	Commercial	Remodeling of existing 1.027 ac	-	-	-
3	Single-Family	93 du	2.93 persons/du	272	-
4	Animal Hospital	0.092 ac	28.39 empl/ac	-	3
5	Religious Facility	2.121 ac	11.20 empl/ac	-	31
	Classroom	0.389 sf			
6	Single-Family	101 du	2.93 persons/du	296	-
7	Townhome Condominium Duplexes	108 du	2.93 persons/du	316	-
8	Single-Family Detached Homes	85 du	2.93 persons/du	249	-
9	Restaurant	0.039 ac	112 empl/ac	-	4
10	Condominium/ Single-Family	521 du	2.93 persons/du	1,527	-
11	Religious Facility	0.152 ac	11.20 empl/ac	-	2
TOTAL		908 du		2,660	57

Note: Generation rates from nonresidential projects were obtained from the Employment Density Summary Report prepared for SCAG by the Natelson Company.

ac = acres empl/ac = employees per acre
du = dwelling units sf = square feet

¹ University of California, Irvine, School of Social Ecology. 2017. *Metropolitan Futures Initiative (MFI) Quarterly Report: Jobs-Housing Balance in Egohoods in Southern California*. Website: https://mfi.soceco.uci.edu/files/2017/01/UCi16_MFI_Report4_Jobs-Housing-Balance.pdf (accessed August 12, 2019).

If the proposed Project and all 908 of the related residential units were constructed, the cumulative population increase of 4,934 new residents in Lake Forest would not be considerable compared to SCAG's forecast increase of 12,200 people between 2012 and 2040, as shown in Table 4.13.B. Therefore, the proposed Project's contribution to cumulative impacts associated with population growth would be less than significant, and no mitigation would be required.

4.13.8 Level of Significance Prior to Mitigation

The proposed Project would not result in potentially significant impacts related to population, housing, or employment growth.

4.13.9 Regulatory Compliance Measures and Mitigation Measures

The proposed Project would not result in potentially significant impacts related to population, housing, or employment growth, and no mitigation would be required.

4.13.10 Level of Significance after Mitigation

The proposed Project would not result in potentially significant impacts related to population, housing, or employment growth.

If all 908 of the related residential units were constructed, the cumulative increase of 1,684 housing units would not be considerable compared to SCAG's projected Lake Forest housing increase of 4,200 units between 2012 and 2014, as shown in in Table 4.13.B. Therefore, the proposed Project's contribution to cumulative impacts associated with direct housing growth would be less than significant, and no mitigation would be required.

In total, the related projects would have the potential to result in 57 additional employees in Lake Forest. The combined construction of the related employee-generating projects and the proposed Project would yield approximately 117 new employees. (60 employees [proposed Project] + 57 employees [related projects]). The 117 new employees would also be relatively few compared to SCAG's forecasted employment increase of 9,800 employees between 2012 and 2040 in Lake Forest as shown in in Table 4.13.B. Construction of the related projects would result in increased temporary (short-term) employment opportunities. Although the related projects would increase the number of available construction jobs, none of these employees are expected to relocate, thereby creating a permanent increase in population or an increased demand for housing in the Project area. Therefore, cumulative impacts relating to population and housing growth due to job growth would be less than significant, and no mitigation would be required.

The related projects include a variety of residential, commercial, and recreational uses. Some of these related projects may include the extension of roads or infrastructure. However, it is expected that those infrastructure improvements would only serve the applicable related projects. Therefore, it is not anticipated that the related projects would extend roads or other infrastructure into previously undeveloped areas that would be available for future development.

Based on the analysis above, the proposed Project in combination with the related projects would not result in a significant impact on population or housing because the increase in population,

housing, and employment that would be generated by the proposed Project and the related projects would not be considerable compared to the growth expected under these forecasts. In addition, roadways and other infrastructure are not anticipated to be extended into previously undeveloped areas that would but available for future development. Therefore, the cumulative impact of the proposed Project and the related projects on population growth would not be significant, and no mitigation would be required.

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4.14 PUBLIC SERVICES

This section describes the public services within whose jurisdiction the Project site is located and evaluates the potential impacts of the proposed Project on public services. This section is based on multiple data sources, including written correspondence and coordination with public service providers (Appendix K). This section addresses the following public services (service providers are noted in parenthesis):

- Fire Protection (Orange County Fire Authority [OCFA])
- Police Protection (Orange County Sheriff's Department [OCSD])
- Public Schools (Saddleback Valley Unified School District [SVUSD])
- Parks (City of Lake Forest)
- Public Libraries (OC Public Libraries [OCPL])

4.14.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Six letters included comments related to Public Services.

The letter from SVUSD provided generation rates and enrollment and capacity information for the school capacity analysis and provided additional California school siting requirements. The letter from OCFA (July 31, 2018) suggested mitigation measures to reduce potential impacts to fire services. The letter from Orange County Public Works (OCPW) (August 13, 2018) expressed concern about demand on library services based on increase population from the proposed Project and provided information on library service standards.

The letters from Bob Holtzclaw (July 25, 2018) and Charles Larson (August 4, 2018) expressed concern that SVUSD may not use the potential school site. Charles Larson also opined that Foothill Ranch Elementary isn't overcrowded. The letter from the Autumnwood Homeowners Association (August 8, 2018) provided general concerns about potential impacts to public safety services.

4.14.2 Existing Environmental Setting

4.14.2.1 Fire Protection

The City contracts with the OCFA for fire protection services. OCFA is a Joint Powers Authority responsible for reducing loss of life and property from fire, medical, and environmental emergencies. OCFA serves ~~24~~ ~~23~~ cities in Orange County (County) and all unincorporated areas in the County and protects over ~~1.9~~ ~~1.8~~ million residents through its ~~79~~ ~~72~~ fire stations located throughout the County.

In addition to providing fire, emergency medical, and rescue services, OCFA provides a variety of public services, including:

- Receiving and dispatching emergency calls
- Providing public education programs to schools, businesses, community associations, childcare providers and other members of the community
- Administering a Reserve Firefighter Program
- Adopting and enforcing codes and ordinances relative to fire and life safety issues associated with commercial, industrial, and residential development
- Maintaining a firefighting helicopter used for emergency responses throughout the year;
- Coordinating the inspection of all commercial buildings, investigating all fires, and enforcing fire code hazardous materials regulations-inspections
- Working with developers and jurisdictional planning departments on development projects impacting fire protection services, from conception through planning process approval
- ~~Conducting new construction inspections, fire safety inspections, and State Fire Marshal-required inspections (including high-rise, jail, board and care, and day care inspections), and enforcing applicable fire codes and ordinances;~~
- Interacting with developers, architects, and engineers to meet the fire protection requirements for buildings and developments by reviewing all architectural blueprints, development plans, and proposals submitted in OCFA's jurisdiction
- Conducting an inventory program of hazardous materials stored, handled, and used within OCFA's jurisdiction, and maintaining related information on a data base accessible to all emergency response agencies in the event of a major emergency
- Conducting California Fire Code inspections, assisting in reducing risks associated with the use of hazardous materials in the community, and administering the State-mandated Risk Management and Prevention program
- Investigating fires to determine their cause, preparing arson and hazardous materials cases for the District Attorney's Office, and initiating actions to recover costs for negligently caused fires
- Developing and maintaining a fire-safe corridor between the wildland and community developments through fuel modifications and inspections

Lake Forest is in Division V, which includes Battalion 4. Division V serves the cities of Lake Forest, Laguna Woods, Newport Coast, Aliso Viejo, Laguna Hills, Laguna Niguel, and the unincorporated areas of Emerald Bay and Laguna.¹

Fire Station Nos. 19, 42, and 54 are the three OCFA Stations within Lake Forest. Located at 19811 Pauling Avenue, 0.57 mile (mi) east of the Project site, Fire Station No. 54 personnel would be the first to the Project site in the event of an emergency and would therefore be designated as the “first-in” station. Station No. 54 is staffed by three captains, three engineers, and ~~six~~ three firefighters. In 2018, ~~the three stations in Lake Forest~~ OCFA responded to 5,176 calls in Lake Forest.²

“Second call” stations are fire stations that support the “first-in” station. Fire Station Nos. 19 and 42 would be designated as the “second call” stations to support Fire Station No. 54. Fire Station No. 19 is at 23022 El Toro Road, Lake Forest, 2.87 mi southwest of the Project site. Station No. 19 is staffed by three captains, three engineers, and six firefighters. Station No. 42 is at 19150 Ridgeline Road, Lake Forest, 2.46 mi northeast of the Project site. Station No. 42 is staffed by three captains, three engineers, and three firefighters.

In the previous decade, OCFA’s average response time³ for emergency calls remained relatively constant at less than 7 minutes per call.⁴ Response time, which measures the elapsed time between a 9-1-1 call answer and the first fire department unit arrival, is 7:58 (80th percentile) and 9:17 (90th percentile).⁵ The ratio of firefighters per 1,000 residents is almost 6 firefighters per 10,000 residents. Emergency call load also increased by 72 percent during that period. The significant jump in call volume was in part due to Santa Ana joining the OCFA⁶.

4.14.2.2 Police Protection

The City contracts with the OCSO for law enforcement services. According to the OCSO’s website, the OCSO has approximately 3,800 sworn and professional staff members and more than 800 reserve personnel. The Southwest Operations Division and Southeast Operations Division of the OCSO provide law enforcement services to an area encompassing the entire southern portion of the County. The Southeast Operations Division provides law enforcement services to the City. The Southeast Operations Division deploys 65 patrol cars during each 24-hour period. This requires

¹ Orange County Fire Authority, Operations Directory: <https://www.ocfa.org/aboutus/departments/OperationsDirectory/Division5.aspx> (accessed July 23, 2018).

² Orange County Fire Authority, Station Statistics. Website: <https://www.ocfa.org/Uploads/Transparency/OCFA%20Annual%20Report%202018.pdf> (accessed June 18, 2019).

³ OCFA defines response time as the time interval between Dispatch Notification and Arrival on Scene. It includes Dispatch time, Turnout time, and Travel time. Response time goals are established through OCFA policy. Response time performance is generally measured for the first unit on scene (Distribution) and for an Effective Response Force (Concentration). Incident response times are impacted by many variables including availability of first due units, travel distance, traffic, geography, weather, and street networks.

⁴ Orange County Fire Authority Fiscal Year 2018/19 Adopted Budget Website: <https://www.ocfa.org/Uploads/Transparency/OCFA%202018-2019%20Adopted%20Budget.pdf> (Accessed June 10, 2019).

⁵ Ibid.

⁶ Ibid.

approximately 223 staff members, of which 168 are sworn peace officers.¹ OCSD personnel are assigned to the City, including 5 sergeants, 3 investigators, 38 deputies, an investigative assistant, 5 community service officers, and 1 crime prevention specialist. Services to the City are provided out of OCSD's Saddleback Station at 20202 Windrow in Lake Forest, 0.2 mi east of the Project site. The OCSD/Police Services Department embraces the concept of community-oriented policing, which encompasses the active participation of local government, civic and business leaders, residents, schools, churches, and other public and private agencies.

The Federal Bureau of Investigation (FBI) indicates that 1.2 police officers per 1,000 residents is the average ratio for Western-region cities with populations less than 100,000 (FBI 2014). The OCSD does not use a standard officer-to-population or standard response time objective ratio to measure the adequacy of policing levels in Lake Forest. Instead, the OCSD analyzes demographics, service calls, population, crime trends, and other changing factors to determine the level of police protection services needed. The current officer-to-resident ratio in the City is estimated to be 0.54 police officer per 1,000 residents.²

Response times to the Project site depend on various factors, including the location of patrol vehicles at the given moment. Emergency calls receive the quickest response, with alarm calls and non-emergency calls having longer response times. Written correspondence with the OCSD dated July 10, 2019, confirmed that response times for Lake Forest for both Priority 1 (i.e., red light/siren) and Priority 2 (i.e., urgent—no lights/siren) are less than 5 minutes and 7 minutes, respectively.

Planned expansions to police facilities include the planned Community Policing Center being constructed as a part of the new Lake Forest Civic Center and expected to open in summer of 2019. The Schematic Design the City Council approved on September 20, 2016 included an Emergency Operations Center, a deputy sheriff workroom, a dedicated interview room, a dedicated lobby, offices, and a Sheriff's Team of Active Retired Seniors (STARS) work area the Community Policing Center (City of Lake Forest 2016a, 2016b).

4.14.2.3 Public Schools

The provision of education and school facilities in Lake Forest is the responsibility of SVUSD, which enrolled 27,329 students as of the 2017–2018 school year and includes all or part of Lake Forest, Rancho Santa Margarita, Mission Viejo, Foothill Ranch, Laguna Hills, Trabuco Canyon, and Laguna Hills. Governed by a six-member Board of Education—including one student member—SVUSD currently (2017–2018 school year) operates 23 elementary schools (K–6), 1 kindergarten through 12th grade (K–12) school, 4 middle schools (7–8), 4 comprehensive high schools (9–12), 1 alternative education high school, 1 continuation school, 1 special education high school (7–12), and 1 adult school.

¹ Orange County Sheriff's Department. Website. Southeast Operations. Website: <http://www.ocsd.org/divisions/fieldops/southeast> (accessed July 1, 2019).

² There are 46 deputy sheriffs assigned to the City of Lake Forest. According to the California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2014 with 2010 Census Benchmark City/County Population and Housing Estimates, Lake Forest's population in 2018 was 85,048. Therefore, $46/85.048 = 0.54$.

The Project site is not currently included within a specific school attendance boundary. Potential schools serving the Project site would include Portola Hills Elementary School, Lake Forest Elementary School, Foothill Ranch Elementary, Rancho Canada Elementary, Serrano Intermediate School, El Toro High School, and Trabuco Hills High School. Table 4.14.A below shows enrollment and capacity data for SVUSD schools. Foothill Ranch Elementary is the elementary school closest to the Project site (0.7 mi). However, there is an existing shortage of 262 seats at Foothill Ranch Elementary. Lake Forest Elementary is the next in proximity, 1.4 mi from the Project site. There is also an existing shortage of seats at Lake Forest Elementary. Portola Hills Elementary and Rancho Canada Elementary are almost equidistant from the Project site, 1.9 mi and 1.8 mi from the Project site, respectively. As shown in Table 4.14.A, Rancho Canada Elementary has a large surplus of 307 seats. Santiago Elementary is 2.7 mi from the Project site and is not likely to accommodate any students from the proposed Project. Serrano Intermediate School is 2.8 mi from the Project site and El Toro High School and Trabuco Hills High School are 2.3 mi and 1.2 mi, respectively, from the Project site. The intermediate and high schools serving the Project vicinity all have existing surpluses.

**Table 4.14.A: Saddleback Valley Unified School District
Enrollment Capacity**

School Facility	Capacity	Enrollment	Surplus (Shortage) of Seats
Foothill Ranch Elementary	932	1,194	(262)
La Madera Elementary	609	610	(1)
Lake Forest Elementary	755	864	(109)
Olivewood Elementary	455	519	(64)
Portola Hills Elementary	664	653	11
Rancho Canada Elementary	872	565	307
Santiago Elementary	520	368	152
Total Elementary School Capacity	4,807	4,771	34
Serrano Intermediate	1,458	1,169	289
Total Intermediate School Capacity	1,458	1,169	289
El Toro High School	2,754	2,435	319
Trabuco Hills High School	2,943	2,831	112
Total High School Capacity	5,697	5,266	431

Source: Correspondence, "Response to Notice of Preparation of the Nakase Property Area Plan Environmental Impact Report" (SVUSD 2018b).

SVUSD = Saddleback Valley Unified School District

Table 4.14.B shows the number of projected unhoused students from development projects in Lake Forest through calendar year 2027. As shown in Table 4.14.B, there are a total of 2,395 projected unhoused students.

The demand for public school facilities is driven by residential land use. As the Project site does not currently include residential land uses, the existing land use does not create any demand on public school facilities.

Table 4.14.B: Projected Unhoused Students from Future Units

School Level	Projected Students from Future Units ¹	Surplus Seats ²	Projected Unhoused Students
Elementary School	1,657	30	1,627
Intermediate School	455	258	197
High School	956	385	571
Total	3,068	673	2,395

Source: Table 7, Saddleback Unified School District Residential Development School Fee Justification Study (SVUSD 2018c)

¹ Projected students from future units are non-mitigated future units (units of which the developer/applicant has not mitigated their impacts on the school district through the execution of a mitigation agreement wherein such units pay fees separate from school fees and Alternative Fees.)

² Surplus seats were determined based on the total surplus shown in Table 4.14.A, apportioned between the mitigated and non-mitigated future units. Of the surplus seats identified, it was determined that these seats are available to house students generated from non-mitigated future units.

SVUSD = Saddleback Valley Unified School District

4.14.2.4 Parks

Section 4.15, Recreation, provided later in this chapter, contains a detailed discussion related to parks and recreational facilities within Lake Forest. The City maintains and operates 32 public parks, consisting of approximately 280 acres (ac). In addition, Limestone/Whiting Wilderness Park encompasses 1,101 ac of natural land in Lake Forest. Private parks are also distributed throughout Lake Forest in various Planned Communities. According to the City of Lake Forest General Plan Recreation and Resources Element, the City determines the need for park space based on its population. The City requires 5 ac of park space per 1,000 residents. Some school recreational facilities can be used to meet the park goal of 5 ac per 1,000 residents. Up to 50 percent of the school facilities can be used, provided the school facilities are open to the public. Because the Project site does not currently contain residential land uses, the existing land use does not contribute to a demand for park facilities within Lake Forest or Orange County.

4.14.2.5 Public Libraries

The OCPL system provides library services to Orange County, including the Lake Forest, and includes 33 branches, 2 of which are in Lake Forest. The Foothill Ranch Library is at 27002 Cabriole Way, 1 mi northeast of the Project site. The El Toro Library is at 24672 Raymond Way, approximately 4.5 mi southwest of the Project site.

Correspondence with OCPL received November 21, 2018 confirmed that the Foothill Ranch Library is 12,914 square feet (sf), including a Community Room and Friends of the Library space. According to OCPL, resources are limited and need upgrading to meet the needs of a new community. Improvements could include upgraded electrical; wireless internet; furniture; heating, ventilation, and air conditioning; and space. Parking is also limited.

The El Toro Library is 13,940 sf, including a Community Room and the Friends of the Library space. According to OCPL, resources at this library are lacking, as there is no room to add shelving for collections or kiosks for checking out laptops and chargers. The existing community room does not accommodate the programming needs and parking is limited for the building. The library also needs new furniture to accommodate electrical outlets for users.

According to the City of Lake Forest General Plan Public Facilities and Growth Management Element, the City uses a library demand of 0.2 sf of library space per capita. Based on the City's 2018 population,¹ the City has an existing demand for 17,009.2 sf of library space. The Foothill Ranch Library (12,914 sf) and the El Toro Library (13,940 sf) are cumulatively 26,854 sf, which exceeds the demand for library space required by the City's General Plan.

It should also be noted that, according to the Public Services and Facilities Element of the Orange County General Plan, the same standard (i.e., 0.2 sf of library space per capita) has been accepted by the Orange County Board of Supervisors as a planning guide for the purpose of projecting the number and location of new libraries needed.

According to correspondence with OCPL received November 21, 2018, the American Library Association no longer sets quantitative "space per capita standards" for public library buildings and the library demand standard of 0.2 sf of library space per capita is no longer relevant. OCPL's previously adopted volumes per capita standard of 1.5 volumes of books per capita is also no longer used, because the function of the library system has dramatically changed and continues to evolve. According to OCPL, libraries are not "just for books"; communities expect libraries to be used as gathering places, community hubs, a place to go for educational programming and lectures. According to the OCPL, both El Toro and Foothill Ranch branches are at maximum capacity. Because the Project site does not contain residential land uses and does not contribute to the population within Lake Forest, the existing land use does not contribute to a demand on public library facilities within Lake Forest or Orange County.

4.14.2.6 Public Transportation

The proposed Project is within the Orange County Transportation Agency (OCTA) bus service area. OCTA connects Lake Forest with several nearby cities (including Santa Ana, Mission Viejo, Irvine, and Laguna Hills) and several regional destinations such as John Wayne Airport and Irvine Station. OCTA also provides paratransit service through its ACCESS Service. This shared-ride paratransit serves areas within 0.75 mile of an OCTA fixed route service

OCTA currently maintains 3 bus routes, Route 206 on Bake Parkway, 480 on Lake Forest Drive, and 177 on Lake Forest Drive. There is a northbound and southbound bus stop for route 206 on Bake Parkway directly in front of the Project site, a north/south bus stop for route 480 on Lake Forest and Regency, and a north and southbound bus stop for route 177 southeast of the Project site on Town Centre Drive and Alton. Route 85 provides 35 weekday trips per day and 17 Saturday trips.² Route

¹ According to the California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2014 with 2010 Census Benchmark City/County Population and Housing Estimates, the City's population in 2018 was 85,048.

² Orange County Transportation Authority. Bus Book, Route 85. Website: <https://www.octa.net/ebook/RoutePDF/route085.pdf> (accessed 6/25/2019)

206 provides 6 weekday trips per day and no weekend trips¹. Route 480 provides 9 weekday trips per day and no weekend trips².

According to the City of Lake Forest Existing Conditions Report, transit ridership in Lake Forest was generally low. The majority of residents in Lake Forest use motor vehicles as the primary mode of travel, and only 2 percent traveled by transit. Transit ridership near the Project site on Routes 206 and 408 were also generally low at approximately 150 to 250 total annual riders at each stop. Transit ridership on the 177 bus route was generally higher from approximately 150 to 1,500 total annual riders at each stop³.

4.14.3 Regulatory Setting

4.14.3.1 Federal Regulations

There are no federal policies or regulations applicable to public services for the proposed Project.

4.14.3.2 State Regulations

Assembly Bills 2926, 1600, and 2751. To assist in providing facilities to serve students generated from new development projects, the State enacted Assembly Bill (AB) 2926 in 1986, which allows school districts to collect impact fees from developers of new residential, commercial, and industrial developments. Development impact fees are also referenced in the 1987 Leroy Greene Lease-Purchase Act, which requires school districts to contribute a matching share of the costs for the construction, modernization, or reconstruction of school facilities. Subsequent legislation has modified the fee structure and general guidelines. In 1987, the provisions of AB 2926 have been expanded and revised by AB 1600, which limits the ability of a school district to levy School Fees unless (i) there is a need for the School Fee revenues generated, and (ii) there is a nexus or relationship between the need for School Fee revenues and the type of development project on which the School Fee is imposed. (The requirements of AB 1600 were clarified with the passage in 2006 of AB 2751, which codifies the findings of *Shapell Industries vs. Milpitas Unified School District*.)

Senate Bill 50 and California Education Code Section 17620. Senate Bill 50 and California Education Code Section 17620. Senate Bill (SB) 50, the Leroy F. Greene School Facilities Act of 1998, was signed into law on August 27, 1998. It is a program for funding school facilities largely based on matching funds. The approval of Proposition 1A authorized funds for SB 50 in the amount of \$9.2 billion, including grants for construction of new schools and modernization of existing schools. The new construction grant provides funding on a 50/50 State and local match basis. The modernization grant provides funding on a 60/40 State and local match basis. Districts that are unable to provide some or all of the local match requirements and are able to meet financial hardship provisions may

¹ Orange County Transportation Authority. Bus Book, Route 206. Website: <https://www.octa.net/ebusbook/RoutePDF/route206.pdf> (accessed 6/25/2019)

² Orange County Transportation Authority. Bus Book, Route 480. Website: <https://www.octa.net/ebusbook/RoutePDF/route480.pdf> (accessed 6/25/2019)

³ City of Lake Forest 2040 Existing Conditions Report. City of Lake Forest. Website: https://static1.squarespace.com/static/5abd4a977e3c3a6cd57d9c48/t/5be09638c2241bf46b6609fb/1541445207077/Chapter+4_Mobility.pdf (accessed 6/24/2019).

be eligible for additional State funding.¹ SB 50 (codified as California Education Code Section 17620) allows the SVUSD to levy a fee, charge, dedication, or other requirement against any development project within its boundaries for the purpose of funding the construction or reconstruction of school facilities. The maximum fee amount that school districts can assess is limited by statutes provided in California Government Code Section 65995. The SVUSD collects the maximum new school construction facility fee at a rate of \$3.79 per square foot of new residential construction.²

The payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to levels that are less than significant (see California Government Code Section 65996). Stated another way, the provisions of SB 50 provide full and complete mitigation of school facilities impacts, notwithstanding any contrary provisions in the California Environmental Quality Act (CEQA) or other State or local laws. The California Department of Education permits local school districts to increase facility fees subject to Department of Education review and with approval of a nexus study from the school District that demonstrates that costs incurred by the school District for the provision of school facilities and services are higher than Level 1 funding provides. In such an instance, a nexus must be demonstrated in the study between the increase proposed by the local school District and the actual cost of provision of school facilities and services.

California Building Code Title 24. Title 24 of the California Code of Regulations, also known as the California Building Code (CBC or Title 24), contains the design standards that govern the construction of buildings in California to “safeguard life or limb, health, property, and public welfare by regulation and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures and certain equipment.” The 2016 Edition of the CBC contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. The Triennial 2016 CBC edition became effective January 1, 2017, and is composed of 12 parts. Part 2 of the CBC outlines building design and construction requirements relating to fire, life safety, and structural safety.

California Fire Code. The California Fire Code (CFC) includes regulations for emergency planning, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Several fire safety requirements include: installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

Office of Emergency Services. The State of California passed legislation authorizing the Office of Emergency Services to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance

¹ State of California. 2007. *Office of Public School Construction, School Facility Program Handbook*, April.

² Saddleback Valley Unified School District Adjustment in Developer Fees. Effective July 9, 2018. https://www.svUSD.org/uploaded/SVUSD_Department_Files/MOC/Documents/2017-18/Developer_Fees_Level_1_Notification_Memo_Levied_July_9_2018_ADA.pdf (accessed 6/21/2019).

with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

4.14.3.3 Regional Regulations

There are no regional policies or regulations applicable to public services for the proposed Project.

4.14.3.4 Local Regulations

City of Lake Forest Municipal Code. The City of Lake Forest Municipal Code includes the following requirements that would apply to the proposed Project related to the provision of public services

- **Section 8.24.010** adopts the 2016 CFC based on the International Fire Code, 2015 Edition, with errata, published by the International Code Council, with appendices and amendments for the purposes of prescribing regulations governing conditions hazardous to the life and property from fire or explosion.
- **Section 8.30.030** adopts the CBC for the purpose of prescribing regulations for the erection, construction, enlargement, alteration, repair, improving, removal, conversion, demolition, occupancy, equipment, use, height, area and maintenance of all buildings and structures per California Building Code, 2016 Edition, based on the 2015 International Building Code as published by the International Code Council with the amendments provided in Section 8.02.020.
- **Section 8.30.020** outlines amendments to the 2016 CBC including modifications to design, plan review, permit, and payment of fee requirements.
- **Section 7.08.145** discusses the requirements for subdivisions in high or extremely high hazard areas including providing appropriate fire protection by means of fire breaks, fuel modification programs, access roads, sufficient water supply, landscaping, and open spaces.

City of Lake Forest General Plan Public Facilities/Growth Management Element. The primary purpose of the Public Facilities/Growth Management Element is to ensure that growth and development correspond to the provision of adequate public facilities. The Public Facilities/Growth Management Element expresses the City's intention to ensure acceptable service levels for public facilities as development occurs. The following policies are relevant to public services:

Policy 3.1: Work closely with Orange County Fire and the Orange County Sheriff's Department in determining and meeting community needs for safety facilities and services.

Policy 3.2: Periodically evaluate level of service to ensure that Lake Forest has appropriate levels of fire, police, and emergency medical services.

Policy 5.1: Work closely with Orange County Library in determining and meeting community needs for library facilities and services, including hours of operation.

Policy 6.1: Work closely with the Saddleback Valley Unified School District in determining and meeting community needs for public education and related activities.

Policy 7.1: Work closely with the County of Orange, Caltrans, surrounding jurisdictions, and other transportation agencies to provide needed transportation facilities.

City of Lake Forest General Plan Safety and Noise Element. The Safety and Noise Element addresses public safety and quality of life issues. The Safety and Noise Element is a comprehensive program to identify and temper environmental factors that potentially threaten community health and safety. The Safety and Noise Element contains policies and programs to regulate existing and proposed development located in hazard-prone areas. The following policies are relevant to public services:

Policy 2.4: Reduce the risk to the community from fire.

Policy 3.1: Provide substantive levels of police protection.

Policy 3.2: Improve public awareness of ways to reduce criminal activity and Orange County Sheriff's Department responsiveness (Neighborhood Watch, improved communication and education methods).

4.14.4 Methodology

Information regarding public services was obtained through the use of questionnaires sent to public agencies in charge of fire, police, library, and school services. Responses were received by OCSD and OCPL on July 10, 2019 and November 21, 2018, respectively. Information for school facilities was provided during project scoping comments in a letter received on July 5, 2018, and in an additional letter dated September 21, 2017 from SVUSD to the City of Lake Forest summarizing activities and discussions between SVUSD and the Project Applicant/Developer. The information from these questionnaires and correspondence is used in tandem with local regulations to determine if the additional demands of the proposed Project would significantly impact the public services that provide for the area. Copies of the letters referenced above are available in Appendix K of this EIR.

4.14.5 Thresholds of Significance

The thresholds for public services impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's CEQA Significance Thresholds Guide (March 2009). The proposed Project may be deemed to have a significant impact with respect to public services if it would:

Threshold 4.14.1(i): **Result in substantial adverse physical impacts associated with the provision 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

Threshold 4.14.1(ii): Result in substantial adverse physical impacts associated with the provision 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

Threshold 4.14.1(iii): Result in substantial adverse physical impacts associated with the provision 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 schools

Threshold 4.14.1(iv): Result in substantial adverse physical impacts associated with the provision 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 parks.

Threshold 4.14.1(v): Result in substantial adverse physical impacts associated with the provision 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 other public facilities

None of the thresholds for public services were scoped out in the Initial Study, which is included in Appendix A. Therefore, all of the thresholds listed above are addressed in the following analysis.

4.14.6 Project Impacts

Threshold 4.14.1(i): Would the project result in substantial adverse physical impacts associated with the provision 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?

Potentially Significant Impact.

Construction. Construction activities have the potential to affect fire protection services, such as emergency vehicle response times, by potentially requiring partial lane closures during street improvements and utility installation. Mitigation Measure 4.16.1 requires that a Construction Traffic Management Plan (CTMP) be prepared for the proposed Project to ensure that emergency vehicles would be able to navigate through streets adjacent to the Project site that may experience congestion due to construction activities. Mitigation Measure 4.16.1 also requires that all emergency access to the Project site and adjacent areas be kept clear and unobstructed during all phases of demolition and construction. Traffic management personnel (flag persons), required as part of the CTMP, would be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. If a partial street closure (i.e., a lane closure) is required, notice would be provided to the OCSO, and flag persons would be used to facilitate the traffic flow until construction is complete. With implementation of Mitigation Measure 4.16.1, potential impacts related to emergency access during construction would be less than significant. No additional mitigation is required.

Construction of the proposed Project could also increase the potential for accidental on-site fires from such sources as the operation of construction equipment and the use of flammable construction materials. As required by Occupational Safety and Health Administration and Fire and Building Code requirements, the construction contractor would be required to carefully store flammable materials in appropriate containers and to immediately and completely clean up spills of flammable materials when they occur. In addition, construction managers and personnel would be trained in emergency response, and fire suppression equipment specific to construction sites would be maintained on site for the duration of the construction period. Adherence to existing laws would ensure that the proposed Project would not have a significant construction impact related to fire. Construction-related impacts to fire protection, emergency medical services, and fire department response times would be less than significant, and no mitigation is required.

Operation. The proposed Project is designed to comply with adopted fire protection standards as required by the City's Municipal Code (Regulatory Compliance Measure [RCM] PS-1). The proposed Project would incorporate fire hydrants, attic sprinkler protection, a fire department access road, radiant heat zone, and ember mitigation zones as part of its fire protection plan. The proposed Project also includes a fire master plan and fuel modification plan, which the OCSO requires prior to issuance of a building permit. The fire master plan identifies standard design features, including the design of fire department connections, and the fuel modification plan identifies the approved fuel modification zones. The design would include fire lanes and entry points so the Project could allow access for firefighting equipment in the event of a fire. These access driveways would be developed in accordance with the code requirements for site access widths to allow for firefighting equipment to adequately enter and exit the Project site. Adherence to applicable codes as described in RCM PS-1 would decrease the demand for fire services and ensure that there is adequate emergency access on site. In addition, as discussed in Section 4.16, the proposed Project would not result in a significant unavoidable traffic impact to any study area intersections. Therefore, the proposed Project would not impair emergency

response vehicles, and average response times in the area would remain within acceptable response time limits.

The population and housing growth anticipated as a result of the proposed 101 senior affordable housing units and 675 single-family residential units, and the associated 2,274 residents generated would incrementally increase demand for fire protection and emergency service calls. To address the increase in demand for fire and emergency medical services, OCFA requires all developers to enter into a secured fire protection agreement with OCFA to ensure the availability of adequate fire protection services. The agreements specify a developer's pro-rata, fair-share funding for capital improvements necessary to establish and maintain adequate fire protection facilities, equipment, and personnel. Mitigation Measure 4.14.1 requires the developer to enter into the secured fire protection agreement prior to issuance of any building permits for the proposed Project. Implementation of Mitigation Measure 4.14.1 would reduce potential impacts related to the Project's demand for fire protection services to a less than significant level. With implementation of Mitigation Measure 4.14.1, the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection. No mitigation is required.

Threshold 4.14.1(ii): **Would the project result in substantial adverse physical impacts associated with the provision 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?**

Potentially Significant Impact.

Construction. Construction activities have the potential to affect emergency police services by potentially requiring partial lane closures during street improvements and utility installation. Project construction may also necessitate halting traffic to accommodate trucks entering or exiting the Project site during construction (e.g., for the movement of construction equipment). As such, construction activities could temporarily increase response times for emergency vehicles in the vicinity of the Project site. Mitigation Measure 4.16.1 requires that a CTMP be prepared for the proposed Project to ensure that emergency vehicles would be able to navigate through streets adjacent to the Project site that may experience congestion due to construction activities. Mitigation Measure 4.16.1 also requires that all emergency access to the Project site and adjacent areas be kept clear and unobstructed during all phases of demolition and construction. Traffic management personnel (flag persons), required as part of the CTMP, would be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. If a partial street closure (i.e., a lane closure) would be required, notice would be provided to the OCSO, and flag persons would be used to facilitate the traffic flow until construction is complete. With implementation of Mitigation

Measure 4.16.1, potential impacts related to emergency access and police response times during construction would be less than significant. No additional mitigation is required.

Operation. The population and housing growth anticipated as a result of the proposed Project would result in additional demand for police protection and emergency service calls such that additional police officers may be required to respond to calls for service. As discussed above, the FBI indicates that 1.2 police officers per 1,000 residents is the average ratio for Western region cities with populations less than 100,000. To provide that staffing level, the proposed Project would require 2.73 additional deputies. To maintain the City's current deputy staffing level with OCSO, the proposed Project would require 1.44 additional deputies. Implementation of the proposed Project would generate additional funding for the City through property tax revenue. These funds could be used for the development of needed facilities, additional personnel, or new equipment, if required. The allocation of additional tax revenues would be at the discretion of City policymakers based on City needs. Additionally, OCSO indicated in a letter dated July 10, 2019 that, upon completion of the proposed Project, the OCSO would be able to adequately serve the proposed Project.

A Neighborhood Watch Program would be established by the applicant/developer on the Project site. Neighborhood Watch Programs prevent crime and create a partnership between law enforcement and the community thereby reducing calls for service. The OCSO recommends that the Project Applicant/Developer to establish a Neighborhood Watch Program in consultation with OCSO. A neighborhood watch would further reduce calls for service. Regardless, the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for police protection.

As discussed above, the OCSO currently maintains a response time of less than 5 minutes for all emergency incidents. The proposed Project would not increase response times by increasing traffic volumes on area roadways to the point where additional significant congestion would occur. As discussed in Section 4.16, Transportation and Circulation, of this EIR, the proposed Project would not result in a significant impact to any study area intersections after implementation of appropriate mitigation measures. As such, traffic from operation of the proposed Project would not contribute to or result in a substantial increase in response times for police or emergency vehicles, and no mitigation is required.

Threshold 4.14.1(iii): Would the project result in substantial adverse physical impacts associated with the provision 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 schools?

Less than Significant Impact.

Construction. As detailed throughout this EIR, the proposed Project includes dedication of land to SVUSD for future construction of a public elementary school on the Project site. According to a letter from SVUSD to the City of Lake Forest, a Letter of Intent was presented to the District by the Project Applicant/Developer. Three sites were originally identified as possible school sites on the Project site, and an experienced school architectural firm was hired by the Project Applicant/Developer based on SVUSD's recommendation to provide schematic plans in compliance with California Department of Education (CDE) design guidelines for an elementary school at each site. The Developer also hired a planning and environmental firm to review compliance with the CDE Site Selection and Approval Guide. After review of the options, two sites were submitted to the CDE for review. The CDE Field Representative reviewed the CDE 4.0 submittal and visited the sites. Both sites comply with CDE guidelines, and the initial site evaluation recommended that the District proceed with the sites for further evaluation. After various meetings and discussions, SVUSD provided a draft mitigation agreement that is currently in negotiation by both parties.

To the extent to which details are known, the elementary school is integrated into the proposed Project, and the associated physical environmental impacts are analyzed throughout this EIR. As discussed in Section 4.9, Hazards and Hazardous Materials, additional studies to fulfill school siting requirements were also conducted, including an Electromagnetic Field Study, a Health Risk Assessment, a Geologic and Environmental Hazards Assessment Report, and a Water Pipeline and Tank Safety Hazard Assessment. Potential impacts related to construction of the proposed school would be less than significant with implementation of all applicable mitigation, as detailed in this EIR.

Although the proposed Project would cause a slight increase the number of employees at the Project site during construction, as detailed in Section 4.13 of this EIR, construction workers are not anticipated to change their place of residence as a result of working at the Project site. Therefore, there would be no increase in student enrollment at the schools serving the Project site during construction. Potential impacts related to the provision of school services for construction of the proposed Project would be less than significant.

Operation and School Capacities with No School. Table 4.14.C provides the estimated student enrollment for the proposed Project. The senior affordable housing units are not expected to generate any students; therefore, the table includes only the 675 single-family residential units. While it is likely that some of the students generated by the proposed Project would already reside in the area served by the SVUSD and would already be enrolled in SVUDS schools, for the purposes of this analysis, it is conservatively assumed that all students generated by the proposed Project are not currently enrolled in the SVUSD schools near the Project site but would be enrolled upon relocation to the Project site.

Table 4.14.C: Estimated Student Enrollment

School Level	Single-Family Detached Units	SVUSD Student Generation Factors	Students Generated
Elementary School	675	0.1929	135
Intermediate School	675	0.0654	45
High School	675	0.1459	102
Total		0.4042	282

Source: Public comment letter titled “Response to Notice of Preparation of the Nakase Property Area Plan Environmental Impact Report” (SVUSD 2018b).

SVUSD = Saddleback Valley Unified School District

As shown in Table 4.14.C, the Project would generate an estimated 282 students consisting of 135 elementary school students, 45 intermediate school students, and 102 high school students. As discussed in Section 4.14.2, Existing Environmental Setting, the Project site is not currently included within a specific school attendance boundary. However, potential schools serving the Project site would include Portola Hills Elementary School, Lake Forest Elementary School, Rancho Canada Elementary School, Foothill Ranch Elementary School, Serrano Intermediate School, El Toro High School, and Trabuco High School.

As shown in Table 4.14.A, elementary schools in the SVUSD have 34 seats available. Therefore, elementary schools that could potentially serve the Project site would not have adequate capacity to accommodate the 135 elementary school students the Project is expected to generate. As shown in Table 4.14.D below, the proposed Project would create a shortage of 101 elementary school seats if no school is constructed on the Project site (or elsewhere in the District boundaries). Serrano Intermediate School has a surplus of 289 seats and, therefore, has adequate capacity to accommodate the 45 intermediate school students the Project is expected to generate. High schools in Lake Forest have a surplus of 319 seats and, therefore, would have adequate capacity to accommodate the 102 high school students the Project is expected to generate.

Table 4.14.D: School Seat Shortage/Surplus

School Level	Existing Surplus/ (Shortage)	Students Generated by Proposed Project	Surplus/(Shortage) After Implementation of Proposed Project	
			Without the School	With the School
Elementary School	34	135	(101)	899
Intermediate School	289	45	244	244
High School	431	102	329	329
Totals	754	282	472	1,472

Source: Residential Development School Fee Justification Study (SVUSD 2018c).

SVUSD = Saddleback Valley Unified School District

Pursuant to California Education Code Section 17620(a)(1), the governing board of any school District is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district for the purpose of funding the construction or

reconstruction of school facilities.¹ The Project Applicant/Developer would be required to pay such fees to reduce and/or avoid any impacts of new residential development on school services as provided in California Government Code Section 65995. This requirement may be satisfied through the dedication of land on the Project site to the SVUSD for future construction of a school. Therefore, with implementation of RCM PS-2 requiring the payment of development fees (or dedication of land in lieu of payment of fees), impacts to school services and facilities associated with the proposed Project would be less than significant.

Operation and School Capacities with Proposed School. As detailed above, Table 4.14.C provides the estimated student enrollment for the proposed Project. The senior affordable housing units are not expected to generate any students; therefore, only the 675 single-family residential units are included in Table 4.14.C. As shown in Table 4.14.C, the Project would generate an estimated 282 students, consisting of 135 elementary school students, 45 intermediate school students, and 102 high school students. As shown in Table 4.14.A, elementary schools in the SVUSD have 34 seats available. Therefore, elementary schools that could potentially serve the Project site would not have adequate capacity to accommodate the 135 elementary school students the Project is expected to generate. As shown in Table 4.14.D, the proposed Project would create a shortage of 101 elementary school seats if no school is constructed on the Project site (or elsewhere in the District boundaries).

The proposed elementary school is expected to accommodate 1,000 students, which would reduce impacts on school services and facilities. As shown in Table 4.14.D, with dedication of the proposed school site, the SVUSD would have the ability to add 1,000 elementary school seats, thereby eliminating the shortage of 101 seats resulting from the proposed Project. However, if the SVUSD does not accept the dedication of the school site, the Applicant would pay school fees consistent with California Government Code Section 65995. With dedication of the proposed elementary school site or the payment of any school fees (as required by RCM PS-2), impacts would be less than significant and no mitigation is required.

Threshold 4.14.1(iv): **Would the project result in substantial adverse physical impacts associated with the provision 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 parks?**

Less than Significant Impact. Please refer to Section 4.15, Recreation, of this Draft EIR for a detailed discussion related to the proposed Project's potential impacts to parks and recreational facilities. As discussed in Section 4.15, the provision of onsite parks and recreational facilities would offset the

¹ On January 24, 2018, the State Allocation Board increased the maximum residential School Fee authorized by Section 17620 of the Education Code from \$3.48 to \$3.79 per residential building square foot for unified school districts. Based on the square footage of the average residential unit constructed within SVUSD, the School Fees would provide for less than 100 percent of the school facilities cost impacts. Therefore, the School District is fully justified in levying the maximum residential School Fee of \$3.79 per square foot for all new non-mitigated residential development within its boundaries.

additional demand for parks facilities generated as a result of the addition of 101 senior affordable housing units and 675 single-family residential units. The proposed Project would also be consistent with the City's parkland dedication requirements, as required by RCM REC-1, and impacts on existing park and recreational facilities would be less than significant. Therefore, with the provision of onsite private amenities, the proposed Project would not require the construction of new or expansion of existing construction or expansion of existing recreational facilities to maintain acceptable service ratios or performance objectives. Therefore, the proposed Project's potential impact on parks would be less than significant.

Threshold 4.14.1(v): **Would the project result in substantial adverse physical impacts associated with the provision 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 other public facilities?**

Less than Significant Impact.

Public Libraries.

Construction. Short-term construction activities would not have any impact on the existing OCPL system because there are no nearby libraries that could be impacted by construction activities and construction activities would not generate demand for library services. It is unlikely that the construction workers would increase the demand for library services during the temporary construction of the proposed Project, as most workers would commute directly to and from the Project site for the sole purpose of working on the proposed Project. Therefore, no new libraries would be required to be developed nor would an existing library need to be expanded to provide adequate public library services during proposed Project's construction. Therefore, the proposed Project's potential impact on public libraries during construction would be less than significant.

Operation. Demand for library services is typically determined based on the size of the resident population. As discussed in Section 4.13, Population and Housing, the projected increase in population associated with the proposed 101 senior affordable housing units and 675 single family residential units would be approximately 2,274 persons. As discussed above, the City uses a library demand ratio of 0.2 sf of library space per capita. Based on the City's 2018 population,¹ the City has an existing demand for 17,009.2 sf of library space. The Foothill Ranch Library (12,914 sf) and the El Toro Library (13,940 sf) are cumulatively 26,854 sf, an amount that exceeds the demand for library space the City's General Plan requires. The additional population growth associated with the proposed Project would result in a demand for 454.8 sf of additional library space in the City. Based on the City's demand ratio,

¹ According to the California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2014 with 2010 Census Benchmark City/County Population and Housing Estimates, the City's population in 2018 was 85,048.

this increase in demand for library space can be accommodated by the existing libraries in Lake Forest.

As noted above, OCPL does not use a library demand ratio. According to the OCPL, existing libraries in the City are at maximum capacity and no additional library facilities are currently planned that would mitigate the increase in demand for library services represented by the proposed Project. Because the City has its own adopted demand ratio for libraries, this information is provided for disclosure purposes only.

Implementation of the proposed Project would generate additional funding for the City through property tax revenue the proposed Project would generate. These funds could be used for the development of new or expanded library facilities or new library equipment, if required. The allocation of additional tax revenues would be at the discretion of City policymakers based on City needs.

Regardless, based on the City's library demand ratio, the proposed Project would not require the expansion of existing library facilities in the City in order to maintain acceptable service ratios. Therefore, impacts to public library facilities would be less than significant and no mitigation would be required.

Public Transportation.

Construction. Overall, short-term demolition and construction activities would require minimal use of public transportation, and they are not expected to have any adverse impacts on the availability of the public transportation system. The proposed Project would not require the temporary or permanent relocation of any bus stops, and, consistent with the requirements of the Mitigation Measure 4.16.1, OCTA would be notified regarding any affected bus stop locations or routes a minimum of 10 working days prior to construction so that transit service can be rerouted if deemed necessary in the OCTA's expert opinion. Therefore, impacts related to the provision of public transportation services during construction of the proposed Project would be less than significant, and no mitigation is required.

Operation. Operation of the proposed Project is not anticipated to result in a substantial increase in demand for OCTA services within the city. As previously discussed, the OCTA currently operates a northbound and southbound bus stop for Route 206 on Bake Parkway directly in front of the Project site, a northbound/southbound bus stop for Route 480 on Lake Forest and Regency, and a northbound and southbound bus stop for Route 177 southeast of the Project site on Town Centre Drive and Alton.

As discussed previously, transit ridership in the vicinity of the Project site and Lake Forest overall is generally low. Transit ridership near the Project site on Routes 206 and 408 were also generally low at 150 to 250 total annual riders at each stop. Transit ridership on the 177 bus route was generally higher from 150 to 1,500 total annual riders at each stop. There are numerous trips for Routes 480, 206, and 177 (35 daily weekday trips and 17 Saturday trips for Route 85, 6 weekday trips per day for Route 206, and 9 weekday trips per day for Route

480). Therefore, the proposed Project would not create a public transportation need that requires service expansion, and OCTA would be able to provide adequate services to the proposed Project. Therefore, the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, in order to maintain acceptable service ratios, response times or other performance objectives for public transportation. No mitigation is required.

4.14.7 Cumulative Impacts

As defined in the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services. The Project site is a plant nursery in Lake Forest, which is currently not generally served by public service providers because residential uses do not exist on the Project site. The cumulative area for public services is listed below for each individual public service provider.

4.14.7.1 Fire Protection

The geographic area for cumulative analysis of fire protection services is defined as the service territory of Fire Station No. 54. As stated above, Fire Station No. 54 would accommodate the Project's need for fire protection services. Although the proposed Project would increase calls for service, the increase in calls for service is not anticipated to result in an excessive increase in calls for service. Therefore, the proposed Project would not have a cumulatively significant impact on the provision of fire services.

Of the 11 related projects, all would potentially be served by Fire Station No. 54 or Fire Station No. 42. Operation of the related projects are anticipated to increase the overall demand for fire protection services provided by Fire Station No. 54. As discussed in Section 4.13, Population and Housing, the cumulative population and housing growth from the proposed Project and the related projects (4,934 residents and 1,684 housing units, respectively) in Lake Forest would be relatively small compared to the Southern California Association of Governments' (SCAG) projected population increase in Lake Forest and the County. Thus, the proposed Project and the related projects' relatively small increase in population above the SCAG growth forecasts indicates they would be accommodated as part of OCFA's long-term growth planning for fire and other public facilities. Additional demands for fire protection services would be funded by existing funding sources (i.e., property taxes and government funding), to which the proposed Project and related projects would contribute. Additionally, to address the increase in cumulative regional demand for fire and emergency medical services, the OCFA requires all developers to enter into a secured fire protection agreement with OCFA to ensure the availability of adequate fire protection services. The agreements specify a developer's pro-rata fair-share funding for capital improvements necessary to establish and maintain adequate fire protection facilities, equipment, and personnel. Therefore, the proposed Project's contribution to fire protection impacts would not be cumulatively considerable, and no mitigation is required.

4.14.7.2 Police Protection

The geographic area for the cumulative analysis of police protection services is defined as the service area for the OCSD's Southeast Operations Division. Although the proposed Project would result in an increase in calls for service, it would not result in the need for additional or physically altered police facilities.

All 11 related projects are within Lake Forest. As discussed in Section 4.13, Population and Housing, the cumulative population and housing growth from the proposed Project and the related projects in Lake Forest would be relatively small compared to the SCAG forecasted population and housing growth for the city. Additional demands for OCSD services would be funded by existing funding sources (i.e., property taxes and government funding), to which the proposed Project and related projects would contribute. Thus, the proposed Project and the related projects' demand for police services would be accommodated by the City and OCSD's long-term growth planning for police protection services and facilities. Therefore, the proposed Project's contribution to police protection impacts would not be cumulatively considerable, and no mitigation is required.

4.14.7.3 Schools

The geographic area for cumulative analysis of school services is the school district that serves the proposed project (i.e., SVUSD). As discussed above, the proposed Project would not result in significant impacts to school facilities with the implementation of RCM PS-2. However, a cumulative increase in the demand for school services is anticipated to take place with the development of future residential project, the proposed Project itself, and more specifically, the future household growth within the school boundaries currently servicing the Project site. As shown in Table 4.14.E, there is a total of 11 related projects. All related projects are within Lake Forest and within the SVUSD. As Table 4.14.E shows, related projects would generate approximately 204 elementary school students, 61 intermediate school students, and 133 high school students, for a total of 398 students.

As discussed above, the proposed Project would generate an increase of 135 elementary school students, 45 intermediate school students, and 102 high school students, for a total of 282 students. When added to the students generated by the related projects, the cumulative student generation would include 339 elementary school students, 106 intermediate students, and 235 high school students for a total of 680 students overall.

As shown in Table 4.14.F, the intermediate schools and high schools in the area would have adequate capacity to serve the proposed Project and related projects. However, there would be a shortage of 305 elementary school seats without the dedication of the proposed school site. All related projects would be required to fulfill payment of requisite development fees pursuant to California Government Code Section 65995, as described in RCM PS-2. Because the proposed Project and all future related projects would be required to pay school fees as required by RCM PS-2, cumulative impacts that the proposed Project may have on school services would be less than significant. If the school site is developed as proposed, there would be adequate capacity for the cumulative elementary school students generated, which would further reduce impacts to school services and facilities. If the SVUSD does not accept the dedication of the elementary school site,

Table 4.14.E: Estimated Related Project Student Generation

Related Project No.	Land Use	Size	Elementary School	Intermediate School	High School
City of Lake Forest					
1	Private Recreation	2 acres	0	0	0
2	Commercial	Remodeling of existing 1.027 ac	0	0	0
3	Single-family	93 DU	18	6	14
4	Animal Hospital	0.092 acre	0	0	0
5	Religious Facility	2.121 acres	0	0	0
	Classroom	0.389 sf			
6	Single-family	101 DU	19	7	15
7	Townhome condominium duplexes	108 DU	26	7	14
8	Single-family detached homes	85 DU	16	6	12
9	Restaurant	0.039 acre	0	0	0
10	Condominium/ Single-family	521 DU	125	35	78
11	Religious Facility	0.152 acre	0	0	0
Total		908 DU	204	61	133

Note: For multifamily units, the “mutifamily attached” student generation factor was used. For Project 10, because the number of condominium/single-family units has not been determined for a conservative analysis, the greater student generation factor was used (multifamily for elementary school and single-family for intermediate and high school).

DU = dwelling units
sf = square feet

Table 4.14.F: Cumulative Impacts to Saddleback Valley Unified School District

School	Existing Surplus/ (Shortage)	Cumulative Students	Existing Surplus/ (Shortage)	
			Without Proposed Elementary School	With Proposed Elementary School
Elementary School	30	339	(309)	691
Intermediate School	258	106	152	152
High School	385	235	150	250

Source: Residential Development School Fee Justification Study (SVUSD 2018c).
SVUSD = Saddleback Valley Unified School District

the Project Applicant/Developer would pay school mitigation fees, and the proposed Project’s contribution to school impacts would not be cumulatively considerable, and no mitigation is required.

4.14.7.4 Public Library

The geographic area for an assessment of cumulative impacts pertaining to library services is the city of Lake Forest. Of the 11 related projects, only the 5 projects involving residential uses would introduce new residents to the library service area and potentially increase demand for library services. Nonresidential projects are viewed as having relatively limited impacts attributable to occasional and incidental use of library facilities for generalized research purposes. Employees generated by the nonresidential projects would not be expected to patronize local libraries to a measurable extent, as they typically would not have long periods of time during their work to visit

library facilities and would be more likely to use libraries near their homes during non-work hours. The 5 related projects proposing residential uses would generate a total of 2,660 residents and the cumulative increase in residents from the proposed Project in addition to the related projects would be 4,934 residents, as discussed in Section 4.13, Population and Housing. As discussed above, the City uses a library demand ratio of 0.2 sf of library space per capita. Based on Lake Forest's 2018 population,¹ the City has an existing demand for 17,009.2 sf of library space. The proposed Project and the related projects would result in a demand for 986.8 sf of additional library space. As the Foothill Ranch Library (12,914 sf) and the El Toro Library (13,940 sf) are cumulatively 26,854 sf, the existing libraries could accommodate anticipated demand from future projects. Therefore, the proposed Project's contribution to library impacts would not be cumulatively considerable, and no mitigation is required.

4.14.7.5 Public Transportation

The geographic area for the cumulative analysis of transit services is defined as the service territory for the OCTA, which includes all 11 of the related projects. As discussed above, transit ridership in Lake Forest is generally low. Transit ridership on routes 206, 408, and 177 serving the Project site are generally low, and there are numerous trips for each route on weekdays (only Route 85 runs on weekends). With OCTA's ability to meet the future transit demands within the Project area, the increased demand for public transit from the proposed Project in addition to the related projects would create a public transportation need that requires service expansion of the OCTA. Therefore, the proposed Project's contribution to public transportation impacts would not be cumulatively considerable, and no mitigation is required.

4.14.8 Level of Significance Prior to Mitigation

Impacts related to police services, schools, parks, libraries, and public transportation would be less than significant prior to mitigation. The proposed Project would result in potentially significant impacts to fire protection services, and mitigation is required.

4.14.9 Regulatory Compliance Measures and Mitigation Measures

4.14.9.1 Regulatory Compliance Measures

The proposed Project would comply with the following regulatory standards, the implementation of which is intended to reduce impacts related to public services:

RCM PS-1 **City of Lake Forest Municipal Code Section 8.24.010 (California Fire Code Adoption) and Section 7.08.145 (Fire Protection).** Prior to issuance of grading permits for planned structures, the City of Lake Forest Public Works Director, or designee, shall review the building plans to verify that the design conforms to the requirements of the Fire Code as adopted in the City Municipal Code.

¹ According to the California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2014 with 2010 Census Benchmark City/County Population and Housing Estimates, the City's population in 2018 was 85,048.

RCM PS-2 **Payment of School Facility Fees.** Prior to issuance of a building permit, the Project Applicant/Developer shall submit proof of payment of all applicable school facility fees in accordance with Government Code Section 65995 to the Director of the City of Lake Forest Department of Community Development, or designee. This requirement may be satisfied through the dedication of land on the Project site to the Saddleback Valley Unified School District for future construction of a school.

4.14.9.2 Mitigation Measures

Mitigation Measure 4.14.1 **Secured Fire Protection Agreement.** The Project Applicant/Developer shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority (OCFA). The Secured Fire Protection Agreement shall specify the developer's pro-rata fair-share funding of capital improvements necessary to establish adequate fire protection facilities and equipment, and/or personnel. Evidence of an OCFA-approved agreement shall be submitted to City of Lake Forest Director of Community Development, or designee, prior to issuance of the first any building permits.

4.14.10 Level of Significance after Mitigation

With implementation of Mitigation Measure 4.14.1, potentially significant impacts would be reduced below a level of significance.

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4.15 RECREATION

This section describes the parks and other recreational facilities near the Nakase property (Project site) and evaluates the potential impacts of the proposed Nakase Nursery/Toll Brothers Project (proposed Project) on those facilities. This section also discusses the existing setting of recreational facilities within and near Lake Forest and sets forth the relevant regulatory requirements that apply to the analysis of the proposed Project's impact on recreational facilities. This section is based, in part, on information provided in the Recreation and Resources Element of the City of Lake Forest (City) General Plan and applicable provisions of the City's Municipal Code.

4.15.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Two comment letters included comments related to Recreation.

The letter from Sue Nath (July 30, 2018) suggested evaluating the development of a park or garden on the Nakase site. The letter from Judy Esposito (August 6, 2018) suggested making the nursery site into community gardens or a forest.

4.15.2 Existing Environmental Setting

4.15.2.1 Existing Project Site

The Project site is located in the north-central portion of Lake Forest. The approximately 122-acre (ac) Project site is currently operating as the Nakase Brothers Wholesale Nurseries, an agricultural wholesale plant nursery. Historically, the main portion of the Project site has been used primarily for agricultural production. The Project site is bounded on the northwest by Bake Parkway, on the northeast by Rancho Parkway, on the southeast by the Serrano Creek Trail, and on the southwest by commercial, industrial, and office uses, with Dimension Drive beyond. Manufactured landscape slopes, chain-link fences, and block walls enclose the Project site. In addition, several mature trees line the northeastern and southeastern boundaries of the Project site.

Serrano Creek Trail is a 7.2-mile (mi) moderately trafficked out-and-back trail that roughly follows the path of Serrano Creek. A portion of the trail is located adjacent to the Project site. Serrano Creek Trail offers a number of activity options and is accessible year-round. Dogs and horses are also able to use this trail. The southern end of Serrano Creek Trail starts at Serrano Creek Park, while the northern end, which is part of Limestone/Whiting Ranch Wilderness Park, merges with another trail in Limestone/Whiting Ranch Wilderness Park.

Nature Park is a 4.5 ac neighborhood park located immediately adjacent to the southern boundaries of the proposed Project. The park features mature oak trees, grass areas, walking paths, and a picnic area.

The City's General Plan designates the Project site as Business Park and Business Development Overlay (BDO). The Project site currently has a zoning designation of A1–Agricultural District, which

is intended to provide for agriculture, outdoor recreational uses, and other low-intensity uses requiring open space.

4.15.2.2 Existing Recreational Facilities within the City

The City provides a variety of recreational opportunities, including nature parks, a skate park, a sports park, and a recreation center. There are 32 public parks in Lake Forest, which range in size from the approximately 0.2 ac Cavanaugh Park to the 86 ac Lake Forest Sports Park. The City classifies parks as community, neighborhood, or mini-parks based on size and characteristics:

- **Community Parks:** Community parks serve neighborhoods and are intended to have a service radius of approximately 2 to 3 mi. These parks are generally over 10 ac in size and include a variety of facilities, such as active recreational facilities (e.g., athletic fields and group picnic areas). In addition, these large parks often include community centers. Baker Ranch Community Park is located approximately 0.4 mi from the northwest boundaries of the Project site. The 86 ac Lake Forest Sports Park/Recreation Center is located approximately 0.45 mi from the eastern boundaries of the Project site and is one of the largest sports parks in Orange County, with 57 ac devoted to sports fields and a multifunctional recreation center. Other community parks in Lake Forest include Borrego Park, El Toro Park, Foothill Ranch Community Park, Heroes Park, Pittsford Park, Serrano Creek Park, and Tamarisk Park.
- **Neighborhood Parks:** Neighborhood parks are smaller than community parks but are typically at least 3 ac. Neighborhood parks are often adjacent to schools, greenbelts, open space linkages, or other community open space or recreational facilities to facilitate an integrated open space system and normally include tot lots, picnic facilities, and a multiuse court. Lake Forest contains numerous neighborhood parks, including Regency Park, which is approximately 0.41 mi from the southeast boundaries of the Project site, and the Etnies Skatepark, which is approximately 0.13 mi from the eastern borders of the Project site. Other neighborhood parks in Lake Forest include Alton Park, Borrego Canyon Overlook Park, Cherry Park, Concourse Park, Darrin Park, Lake Forest Park, Montbury Park, Mountain View Park, Nature Park, Peachwood Park, Pebble Creek Park, Portola Hills, Rancho Serrano Park, Ranchwood Park, Rimgate Park, Village Pond Park, and Vintage Park.
- **Mini-Parks:** Mini-parks are generally less than 1 ac in size and are usually established in higher-density areas as a substitute for backyards. The City's mini-parks serve various age groups depending on characteristics of the neighborhood. The Barker Ranch Dog Park is a mini-park located approximately 0.5 mi from the western boundaries of the Project site. Other mini-parks in Lake Forest include Cavanaugh Park and Sundowner Park.

Figure 4.15.1 provides the locations of existing recreational facilities near the Project site.

Table 4.15.A provides the acreages and amenities offered by existing City park and recreational facilities. In total, the existing park and recreational facilities listed in this table total 239.15 ac, making up the majority of the City's parkland inventory.

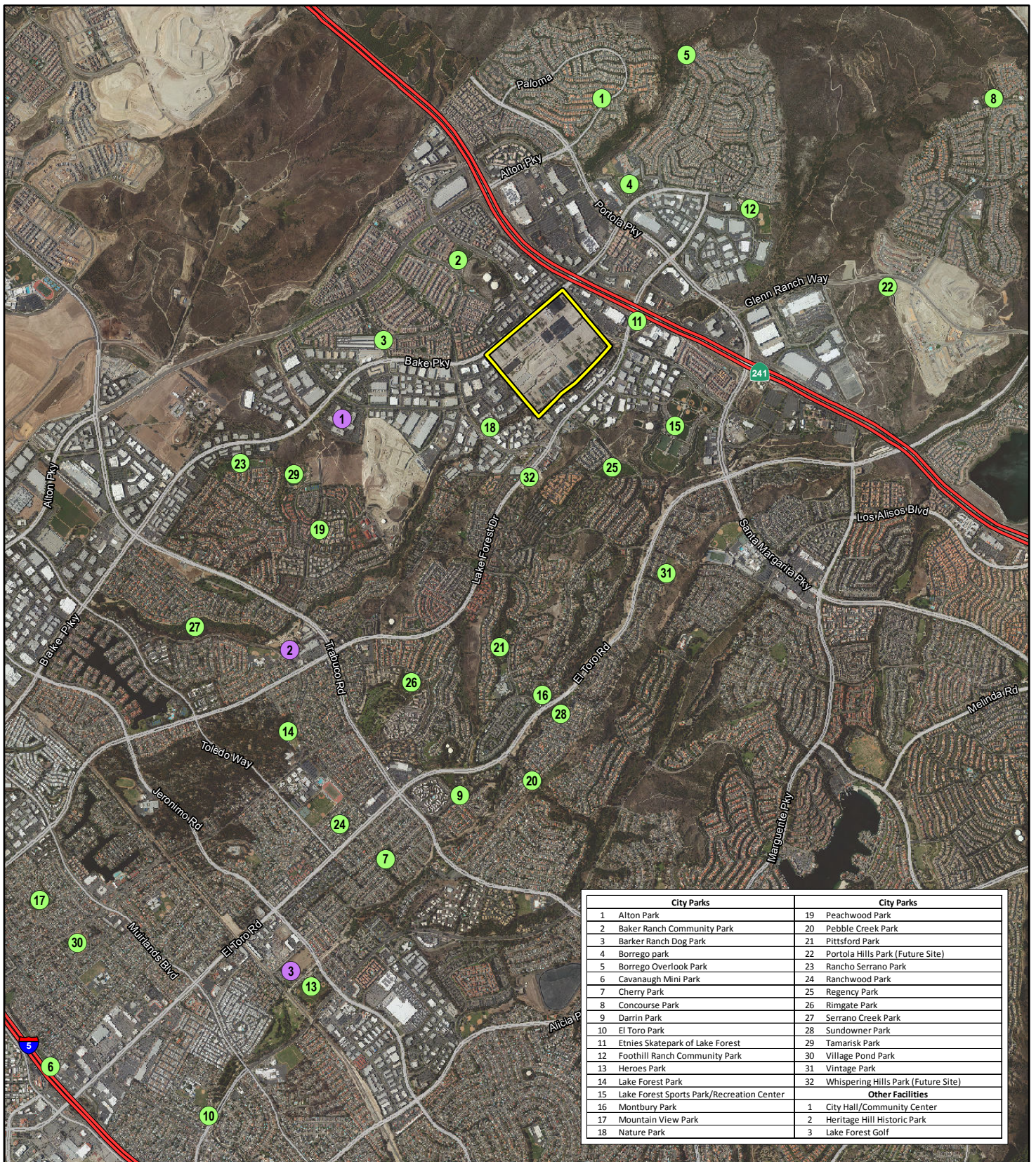


FIGURE 4.15.1



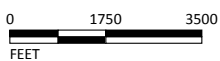
LEGEND

Project Location

Existing Recreational Facilities

City Parks

Other Facilities



SOURCE: Google Maps (2018); City of Lake Forest (2019)

I:\CLF1801\GIS\RecreationalFacilities.mxd (6/17/2019)

Nakase Nursery/Toll Brothers
Existing Recreational Facilities

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Table 4.15.A: Existing City Parks and Recreation Facilities

Name	Location	Acreage	Facilities
Alton Park	Alton Parkway between Bonita Vista and Mallorca	2.3	Tot lot, half-court basketball
Baker Ranch Community Park	26380 Rancho Parkway South	8	Soccer field with overlay
Barker Ranch Dog Park	26500 Baffin Bay Drive	0.5	Perimeter fencing for large and small dog areas, dog water stations
Borrego Canyon Overlook Park	Viaggio Lane near Tessera Avenue	1.6	Tot lot, picnic area, gazebo
Borrego Park	Bake Parkway near Burbank	11	Baseball field, basketball court, play area, restrooms
Cavanaugh Park	23782 Cavanaugh Road	0.2	Play apparatus and half-court basketball
Cherry Park	22651 Cherry Avenue	4.5	Play apparatus, half-court basketball, open play area, picnic shelter, individual and group picnic tables, barbecue grills
Concourse Park	Saddleback Ranch Road near Ranchwood Way	7.0	Basketball court, tot lots, picnic areas
Darrin Park	22461 Cherry Avenue	3.1	Play apparatus, half-court basketball, open play area, individual picnic tables, barbecue grills
El Toro Park	23701 Los Alisos Boulevard	10	Volleyball courts, handball courts (outdoor), and lighted tennis courts
Heroes Park	25420 Jeronimo Road	12.4	Lighted Little League fields, lighted soccer fields, and restrooms
Etnies Skate Park	Lake Forest Drive near Rancho Parkway	5.3	Skate area for all ages, restrooms, picnic tables.
Foothill Ranch Community Park	Pauling near Lake Forest Drive	15.5	Tennis courts, volleyball court, baseball field
Heritage Hill Historical Park (County of Orange Facility)	25151 Serrano Road	4.12 ¹	Open space, historic buildings, educational programs, picnic tables, restrooms, maintenance structure
Lake Forest Park	24000 Serrano Road	2.3	Picnic tables, hiking trail, passive open space
Lake Forest Sports Park and Recreation Center	28000 Rancho Parkway	86	Multipurpose facility, lighted ball fields/soccer fields, multipurpose court, group picnic areas, restrooms, active play areas
Mountain View Park	4061 Dylan Street	5.3	Softball field, half-court basketball, play apparatus, volleyball courts, handball courts, lighted tennis courts, open play area, picnic table, barbecue
Montbury Park	21962 Montbury Drive	3.5	Passive open space
Nature Park	26251 Dimension Drive	4.5	Walking trail, picnic tables, gazebo picnic area
Peachwood Park	Peachwood near Palmwood	2.7	Open space, tot lot, picnic area
Pebble Creek Park	26441 Pebble Creek Road	1.9	Play apparatus, passive open space
Pittsford Park	21701 Pittsford Drive	10	Play apparatus, picnic tables, picnic shelter, tennis courts, restrooms
Rancho Serrano Park	20842 Paseo Sombra	5.1	Picnic tables, passive open space
Ranchwood Park	22500 Killy Street	1.9	Half-court basketball, play apparatus, volleyball court, open space
Regency Park	21478 Regency Lane	5.0	Large, flat turf area; soccer field overlay. City holding bond for future improvements
Rimgate Park	29772 Rimgate Drive	5.0	Half-court basketball courts, play apparatus, grass volleyball court, tennis court, picnic tables, picnic shelter, passive open space
Serrano Park (Tamarisk Park)	Tamarisk at Peachwood	11.2	Baseball fields, soccer field, open play, basketball court, picnic tables
Serrano Creek Park	25101 Serrano Road	44	Play apparatus, walking trail, picnic tables, restrooms
Sundowner Park	22041 Sundowner Lane	0.8	Play apparatus, picnic tables, passive open space
Village Pond Park	23102 Ridge Route Drive	4.7	Picnic tables, pond, passive open space

Table 4.15.A: Existing City Parks and Recreation Facilities

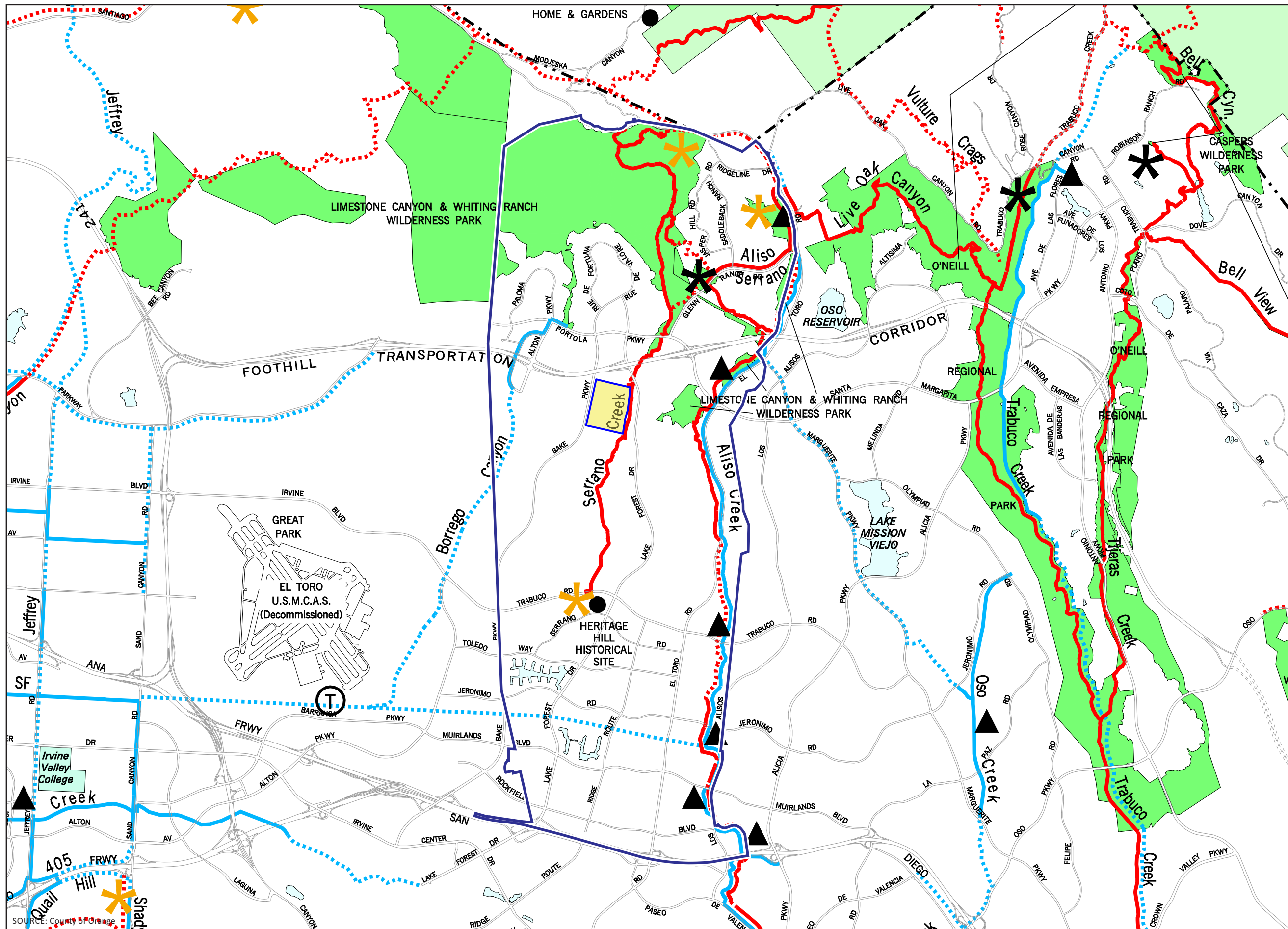
Name	Location	Acreage	Facilities
Vintage Park	21000 Vintage Street	4.8	Basketball courts, play apparatus, parcourse, open play area, picnic tables, barbecues
Portola Park	28040 Glenn Ranch Road	5	Dog park, pickleball courts, restrooms
Total Acres		285.1	

Source: Table RR-2, City of Lake Forest General Plan Recreation and Resources Element (City of Lake Forest 2016c).

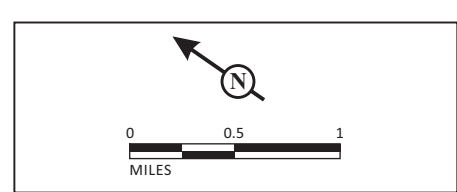
¹ Acreage is not included in the total acreage calculation because it is a County of Orange facility.

In addition to the existing City parks and recreation facilities, residents of the City are able to utilize various regional recreation amenities, including:

- Regional Parks:** The County of Orange (County) owns and maintains regional recreational parks within and near Lake Forest. Local County parks include Limestone/Whiting Ranch Wilderness Park, Heritage Hill Historical Park, and O’Neill Regional Park. These regional parks offer additional recreational opportunities to residents of Lake Forest. According to the City Recreation and Resources Element (City of Lake Forest 2015a), Limestone/Whiting Ranch Wilderness Park encompasses 1,101 ac of land in Lake Forest. In total, Limestone/Whiting Ranch Wilderness Park is approximately 2,500 ac of riparian and oak woodland canyons, rolling grassland hills, and steep slopes of coastal shrub and chaparral. Park amenities include bike trails, an equestrian center, equestrian trails, and hiking trails.
- Cleveland National Forest:** The Cleveland National Forest is the southernmost National Forest in California. Consisting of 460,000 ac, the forest offers a wide variety of terrains and recreational opportunities. It is administered by the United States Forest Service, a government agency within the United States Department of Agriculture. The Cleveland National Forest is located approximately 2.5 mi from the Project site.
- Trails and Bikeways:** Lake Forest’s trail system includes pedestrian and bike trails within open space corridors and along regional trails. The County maintains a coordinated system of trails, including bikeways, equestrian trails, and hiking trails, within Lake Forest. There are a number of proposed improvements, including an off-street bike trail connecting Aliso Creek Trail with Serrano Creek in the northern portion of Lake Forest and the Foothill Transportation Corridor, a riding and hiking trail that would follow the Borrego Wash, a connection between Aliso Creek Trail and Serrano Creek Trail, and a realignment of portions of Aliso Creek Riding and Hiking Trail. The locations of the hiking trails, equestrian trails, and bicycle paths are shown on Figure 4.15.2.



- Riding and Hiking Trails**
- Existing (Solid red line)
 - Proposed (Dotted red line)
- Off-Road Paved Bikeways**
- Existing (Solid blue line)
 - Proposed (Dotted blue line)
- Open Space Categories**
- County Regional Park (Light green fill)
 - National Forest & Federal Land (Lighter green fill)
 - State Park or Local Reserve (Medium green fill)
- Additional Features**
- Historical Sites (Black dot)
 - Rest Areas (Black triangle)
 - Existing Staging Areas (Black asterisk)
 - Proposed Staging Areas (Orange star)
 - Train Stations (Black circle with 'T')
 - Colleges (Light blue fill)
 - Points of Interest (Pink fill)
 - Lake Forest City Boundary (Blue outline)
 - Project Site (Yellow fill)



LSA FIGURE 4.15.2

Nakase Nursery/Toll Brothers
Trails and Bikeways

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- Schools:** City residents also enjoy access to open space and recreational facilities at public schools. Public school playgrounds, under the jurisdiction of the Saddleback Valley Unified School District (SVUSD), are open to the public after school hours. Organized sports leagues (e.g., baseball, soccer, and football) utilize ball fields through a permit process with the SVUSD. According to the Recreation and Resources Element, the City utilizes some school recreational facilities to meet the park goal of 5 ac per 1,000 persons. Up to 50 percent of the school facilities can be used, provided the school facilities are open to the public. At this time, the City does not intend to pursue a joint-use agreement with the SVUSD for school recreational facilities proposed as part of the proposed Project.

Schools under the jurisdiction of the SVUSD that are located in Lake Forest include Foothill Ranch Elementary School, Portola Hills Elementary School, Gates Elementary School, Lake Forest Elementary School, La Madera Elementary School, Olivewood Elementary School, Rancho Canada Elementary School, Santiago STEAM Magnet Elementary School, Serrano Intermediate School, and El Toro High School.

- Community Facilities:** The City has a number of community facilities that host many of its recreation and cultural programs. These facilities include City Hall, the Community Center, and the Senior Center. In addition, both the El Toro Library and Foothill Ranch Libraries include a Community Room and a Friends of the Library space, which serve as gathering places for the community.
- Private Recreational Facilities:** Private facilities in Lake Forest also offer recreational amenities to the residents in the community. In addition to parks and trails, Lake Forest has many private recreational facilities. The privately owned facilities shown in Table 4.15.B are open to the public unless otherwise noted and partially count toward the City’s parkland inventory.

**Table 4.15.B: Existing Privately Owned Parks and Recreation Facilities
(Open to the Public Unless Otherwise Noted)**

Name	Location	Acreage	Facilities
The Grove ¹	101 Mariposa	2.62	Pool, Recreation Building
Passage Park	101 Wild Rose	0.8	Tot Lot, BBQ/Picnic Area, Shade Structure, Half-Court Basketball
Odyssey Park	100 Clover	0.93	Tot Lot, BBQ/Picnic Area, Shade Structure, Half-Court Basketball
Arbors ^{1,2}	101 Bellflower	2.2	Tot Lot, BBQ/Picnic Area, Shade Structure, Half-Court Basketball, Pool (Private)
Total Acres Counting toward Parkland Credit		3.98	

Source: Table RR-2A, General Plan Recreation and Resources Element (City of Lake Forest 2016c).

¹ Private Facility—open to residents of Baker Ranch only; acreage only counts for partial credit (0.25 of full acreage).

² Pool is open to residents of Baker Ranch only; pool is 0.8 acre, which only counts for partial credit (0.25 of acreage).

In addition to the privately owned recreational facilities in Table 4.15.B, there are privately owned recreational facilities open to the public for a user fee, such as the Lake Forest Golf and Practice Center and Serrano Creek Equestrian Center. Although these privately owned facilities do not count towards the City’s parkland inventory, the amenities offered by these facilities also help meet residents’ recreational needs by providing golf courses, equestrian centers, and pool, basketball, barbecue, and picnic areas.

According to the Recreation and Resources Element, the City encourages the inclusion of such facilities in private development, especially those open to the public.

4.15.3 Regulatory Setting

4.15.3.1 Federal Regulations

Americans with Disabilities Act. The Americans with Disabilities Act (ADA) of 1990 (42 United States Code [USC] 12181) prohibits discrimination on the basis of disability in public accommodation and State and local government services. Under the ADA, the Architectural and Transportation Barriers Compliance Board issues guidelines to ensure that facilities, public sidewalks, and street crossings are accessible to individuals with disabilities. Play areas, meeting rooms, park restrooms, and other buildings and park structures must comply with ADA requirements. Park facilities proposed as part of the proposed Project would be required to be ADA compliant.

4.15.3.2 State Regulations

Quimby Act of 1975. The Quimby Act (California Government Code Section 66477) allows the legislative body of a city or county to require by ordinance the dedication of land, the payment of an in-lieu park fee, or a combination thereof for the approval for a final tract or parcel map. In cases where such a dedication or park fee is not obtained through a map, it may be imposed when building permits are issued. The following conditions must be met to comply with the Quimby Act:

- The city or county ordinance must include definitive standards for determining the proportion of a subdivision to be dedicated and the amount of any fee to be paid in lieu thereof.
- The legislative body must adopt a general plan containing a recreation element, and any proposed park or recreational facility must be consistent with the principles and standards established in the element

4.15.3.3 Local Regulations

City of Lake Forest Municipal Code. The following sections of Chapter 7.38, Dedication of Land for Park Facilities and Payment of In Lieu Fees, of the City's Municipal Code are applicable to the proposed Project:

- **Section 7.38.020, Parkland Dedication Requirements,** requires the dedication of land for park facilities as a condition of the approval of a tentative map or tentative parcel map for a subdivision if the subdivision contains 51 or more separate lots or parcels
- **Section 7.38.030, Standards for Determining the Amount of Dedicated Parkland,** establishes that the amount of land dedicated to the City for park facilities shall be consistent with the standards and policies for park facilities adopted in the General Plan or an applicable specific plan and shall bear a reasonable relationship to the need for park facilities by the inhabitants of the subdivision.
- **Section 7.38.040, Amount of Dedicated Parkland to be Required,** establishes the following:

- The number of acres required to be dedicated to the City for park facilities shall be 5 ac per 1,000 estimated population in the subdivision based on the maximum number of dwelling units permitted within the subdivision.
- If the subdivider provides park and recreational improvements to the dedicated land, the value of improvements together with any equipment located thereon shall be credited against the payment of fees or dedication of land.
- A development with private open space shall receive an adjustment to its parkland dedication obligation, as specified in Section 7.38.050.
- **Section 7.38.050, Adjustments to Amount of Dedicated Parkland Which May be Required to Account for Private Open Space**, establishes that if a development includes private open space set aside for active recreation purposes, the number of acres required to be dedicated to the City for park facilities shall be reduced by an amount equal to 25 percent of the number of acres required as determined by Section 7.38.040. The private open space must meet these requirements:
 - The private open space is open to and accessible by all residents of the subdivision.
 - The private open space includes one or more of the following active recreational elements:
 - Open spaces dedicated to active recreational pursuits such as soccer, golf, baseball, softball, and football.
 - Tennis courts, basketball courts, racquetball courts, badminton courts, shuffleboard courts, or similar hard-surfaced areas especially designed and exclusively used for court games.
 - Recreational swimming pools or other swimming areas and those fenced areas directly adjacent to such swimming pools or swimming areas.
 - Use of the private open space is restricted for active recreational purposes by a recorded covenant that runs with the land and that can be terminated only with the prior written consent of the City Council.
- **Section 7.38.090, Payment of In Lieu Fees for Park and Recreation Purposes**, establishes that a payment of in-lieu fees may be required instead of or in combination with the dedication of land, so long as the fees are equal to the value of the parkland that would otherwise have been dedicated.

City of Lake Forest General Plan Recreation and Resources Element. The Recreation and Resources Element of the City's General Plan describes existing park and recreational facilities within Lake Forest, compares the existing acreage of facilities to the standard set forth in the City's Municipal Code (provided above), and identifies goals and policies for the provision of park and recreational facilities.

According to the *Lake Forest General Plan Update Existing Conditions Report* (October 2018), Lake Forest currently has a total of 294 ac of park and recreational facilities, as shown in Table 4.15.C. Based on the City standard of 5 ac for each 1,000 residents, optimally the City should have 424.7 ac of park and recreational facilities within its boundaries to serve its potential population. Therefore, the City has a shortfall of approximately 130.7 ac. Table 4.15.C also includes adjustments to dedicated parkland from the existing privately owned recreational facilities open to the public that are shown in Table 4.15.B.

Table 4.15.C: Park Acreage Needs

Population ¹	Park Acreage Required ²	Available Acreage from Existing and Planned Parkland ³	Surplus/(Shortfall) of Acreage
84,931	424.7 ac	294 ac	(130.7 ac)

Source: Existing Conditions Report. Chapter 7: Community Services and Facilities (City of Lake Forest 2018).

¹ Lake Forest's 2017 population as provided in the Existing Conditions Report.

² Using the standard of 5 ac per 1,000 persons.

³ Total parkland area as provided in the Existing Conditions Report. County and regional parks are not included.

ac = acre(s)

The following policies in the Recreation and Resources Element apply to the proposed Project:

Policy 1.1: Promote the development and maintenance of a balanced system of public and private recreational lands, facilities, and programs to meet the needs of the Lake Forest population.

Policy 1.3: Operate and maintain public park and recreational facilities in a manner that ensures safe and convenient access for all members of the community.

Policy 1.4: Require parkland improvements and facilities that are durable and economical to maintain.

4.15.4 Methodology

Recreation impacts are assessed based on the physical effects of the proposed Project on existing recreational facilities in the area. Specifically, impacts to recreational facilities are assessed based on the potential for the proposed Project to generate increased demand on recreational facilities that could result in deterioration of, or contribute toward substantial accelerated deterioration of, those facilities or require the construction of new facilities or expansion of existing facilities that could have an adverse physical effect on the environment. For the purposes of this analysis, "recreational facilities" are defined as parks and designated public areas used for active or passive recreation. The City's Municipal Code and the Recreation and Resources Element contain requirements for the dedication of land or the payment in-lieu fees for recreational purposes in connection with residential development projects, based on a standard of 5 ac of park and recreational land for each 1,000 residents. The potential effects of construction of new recreational facilities proposed as part

of the proposed Project are evaluated throughout this EIR and therefore are not discussed or analyzed further in this section.

4.15.5 Thresholds of Significance

The thresholds for recreation impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *CEQA Significance Thresholds Guide* (2009). The proposed Project may be deemed to have a significant impact with respect to recreation if it would do the following:

Threshold 4.15.1: 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 4.15.2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

None of the thresholds for recreation were scoped out in the Initial Study, which is included in Appendix A. Therefore, all of the thresholds listed above are addressed in the following analysis.

4.15.6 Project Impacts

Threshold 4.15.1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Potentially Significant Impact. The following analysis of potential impacts to parks is based on the estimated population increase anticipated by the proposed Project build out. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable-housing units. According to Section 4.12, Population and Housing, using a rate of 2.93 persons per household, as determined by the 2010 United States Census, the proposed single-family residential units and senior affordable-housing units are expected to increase the population in Lake Forest by approximately 2,274 persons.

As discussed above, the City's Municipal Code, Chapter 7.38, Dedication of Land for Park Facilities and Payment of In Lieu Fees, requires applicable subdividers to dedicate to the City an amount of land equivalent to 5 ac per 1,000 estimated population for use as park facilities, or pay in-lieu fees instead of or in combination with the dedication of land, so long as the fees are equal to the value of parkland that would otherwise be dedicated. The proposed Project proposes a maximum of 776 units, including a maximum of 675 single-family homes and a maximum of 101 senior affordable-housing units. In accordance with the City's Municipal Code, this number of units would require parkland dedication of 11.37 ac, as shown in Table 4.15.D.

Table 4.15.D: Required Parkland Dedication

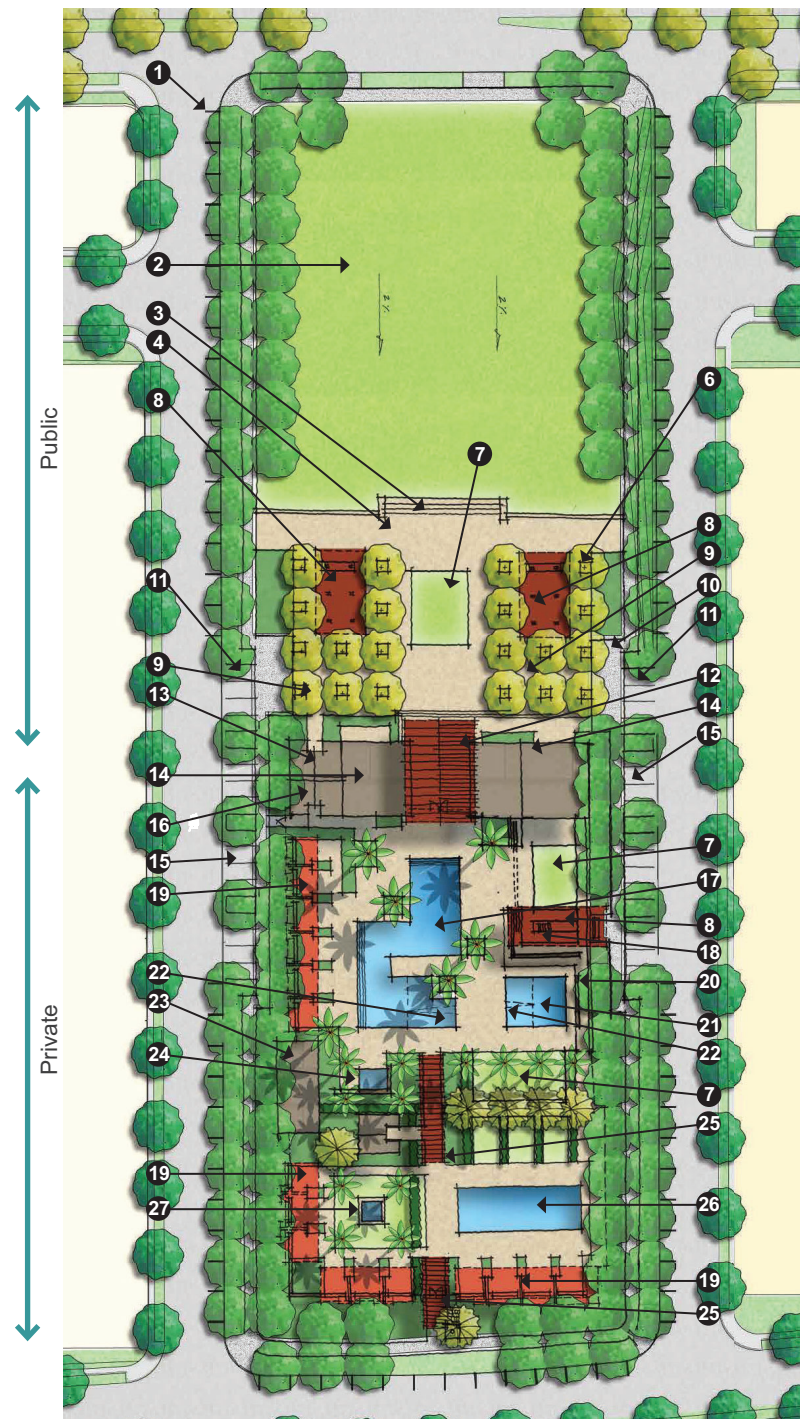
Product Type	Population Factor	Population	Acres per Person	Park Acreage	Total Park Acreage
675 Residential Dwelling Units	2.93	1,978	0.005	9.889	11.37
101 Affordable Senior Units	2.93	296	0.005	1.48	

On-site parks are eligible for a public park credit of 1.15 ac for every net acre, and private recreational uses are eligible for a public park credit of 0.25 ac for every net acre.¹ As shown in Table 4.15.E, the Project Applicant/Developer is proposing to provide 11.32 ac of parkland on the Project site, which would be 0.05 ac less than the minimum park requirements in the City’s Municipal Code. The location of park and open spaces uses is shown on Figure 3.7, and the conceptual design of three of the various park uses is shown on Figure 4.15.3. Should any shortages in parkland dedication be determined by the City upon final park design and the actual number of units built, the Project Applicant/Developer would pay park in-lieu fees for any shortage in parkland dedication. The amount of park in-lieu fees to be paid by the applicant would be determined in accordance with Lake Forest Municipal Code section 7.38.090 D (Regulatory Compliance Measure [RCM] REC-1). This section requires park in-lieu fees based on an appraisal prepared by an appraiser mutually acceptable to the City and Project Applicant/Developer, or as determined by the Development Agreement, which would be considered by the City Council at a later date.

While it is anticipated that residents of the proposed Project would use existing park and natural open space areas located in Lake Forest and Orange County—including, but not limited to, Serrano Creek Trail, Limestone/Whiting Ranch Wilderness Park, and O’Neill Park—the proposed on-site recreation facilities are intended to serve the majority of the recreation demands of new residents. The additional population generated by the proposed Project is likely to utilize the recreational amenities provided as part of the proposed Project because these amenities would be conveniently accessed. In addition, as currently proposed, the public would have access to some of the on-site parks and open space to be developed as part of the proposed Project, which may help address the parkland shortfall in the City.

¹ According to Section 7.38.050 of the City’s Municipal Code, if a planned development includes private open space set aside for active recreational purposes, the acres of parkland required to be dedicated to the City shall be reduced by a number equivalent to 25 percent of the number of acres of the recreational space. The private recreation center proposed as part of the proposed Project includes recreational uses accessible by all residents of the planned community and includes an active recreational component. Therefore, the private recreation component of the proposed Project meets the requirements of Municipal Code Section 7.38.050 to qualify for an adjustment to the amount of dedicated parkland. The private recreational center would reduce the parkland dedication requirement by 0.625 ac (2.5 ac x 0.25).

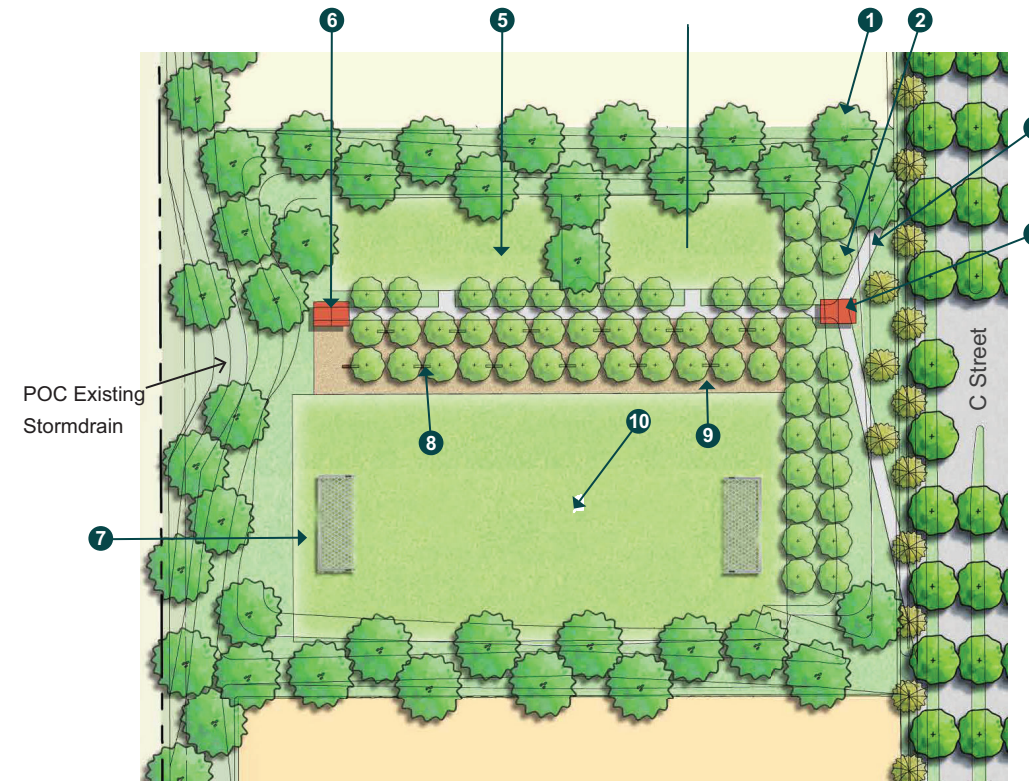
- 1 Parallel Parking Spaces
- 2 Open Lawn / Play
- 3 Grand Steps at Trellis
- 4 Front Porch
- 5 Not Used
- 6 Planting Area
- 7 Focal Lawn
- 8 Shade Structure with BBQ
- 9 "Market Street"
- 10 ADA Access to Building
- 11 Food Truck Parking
- 12 Community Building Entry
- 13 Public Restrooms
- 14 Community Room
- 15 Perpendicular Parking Spaces
- 16 Private Residents Restrooms
- 17 Community Play Pool
- 18 Outdoor Cooking Area
- 19 Cabanas
- 20 Water Feature
- 21 Wading Pool
- 22 Beach Entry
- 23 Mechanical Room
- 24 Spa
- 25 Entry Shade Structure
- 26 Quiet Pool
- 27 Quiet Spa



Central Park & Recreation Area Plan

LEGEND

- 1 Accent Trees
- 2 Canopy Tree
- 3 Walkway
- 4 Fenced Dog Area (Little Dogs)
- 5 Fenced Dog Area (Big Dogs)
- 6 Shade Structure with Seating
- 7 Soccer and Multi Sport Field
- 8 Benches
- 9 Decomposed Granite
- 10 Underground Bio-Remediation

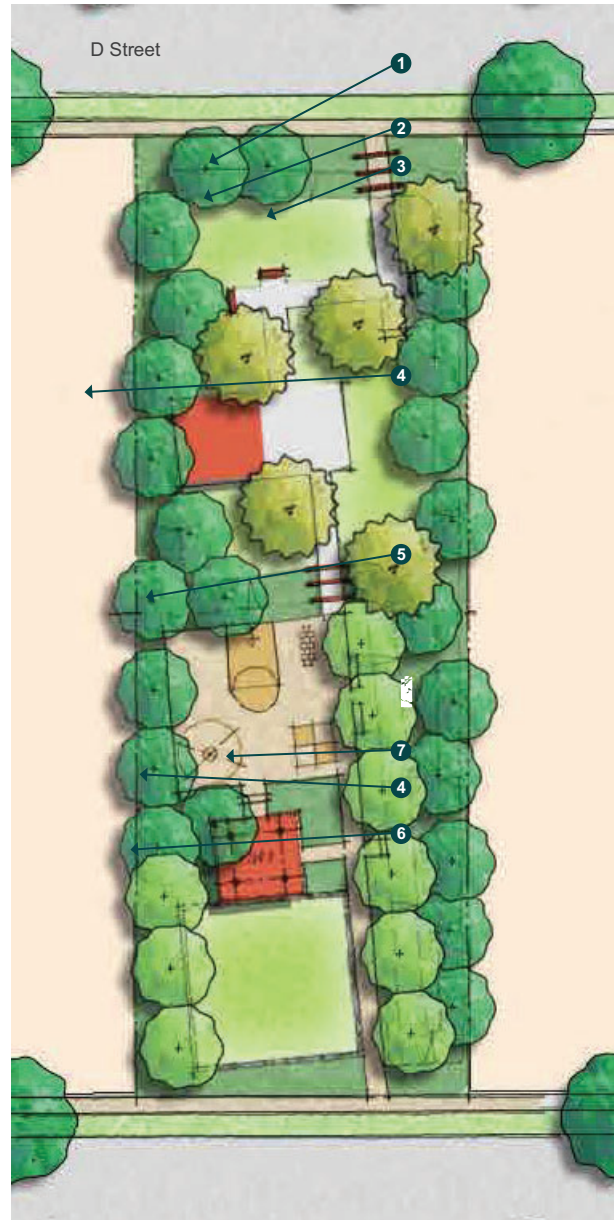


Neighborhood Park

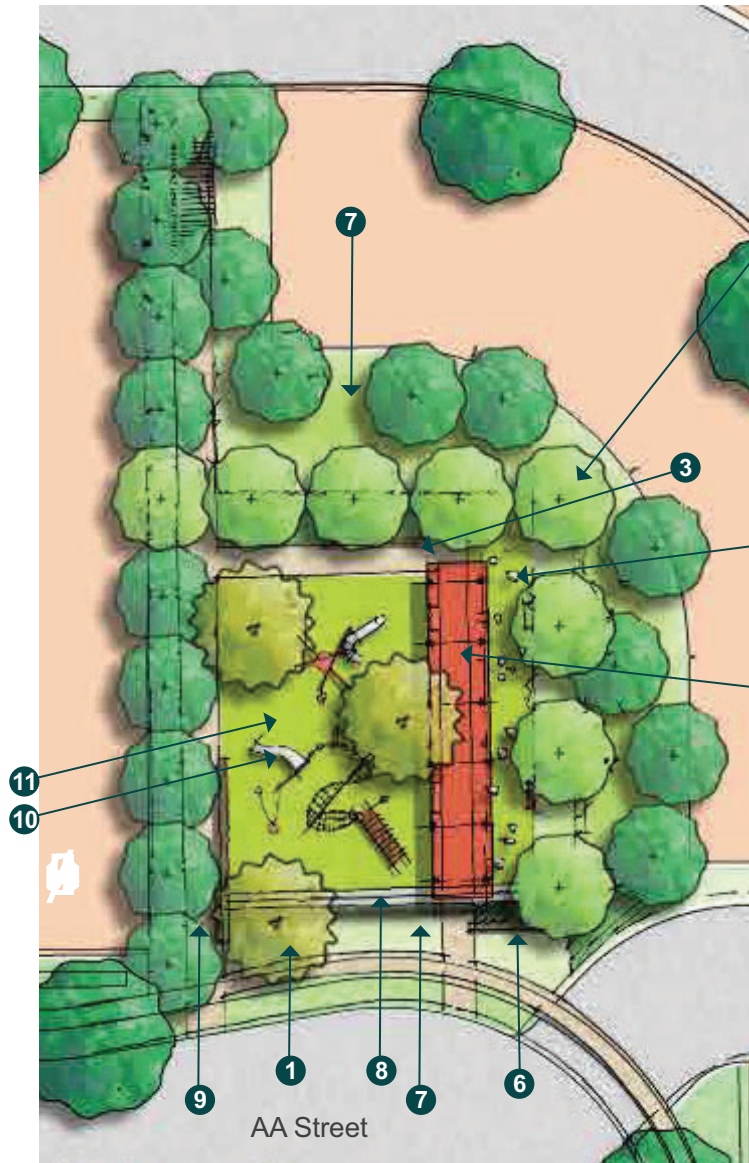
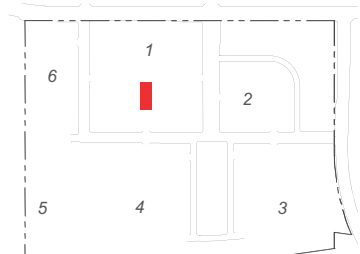
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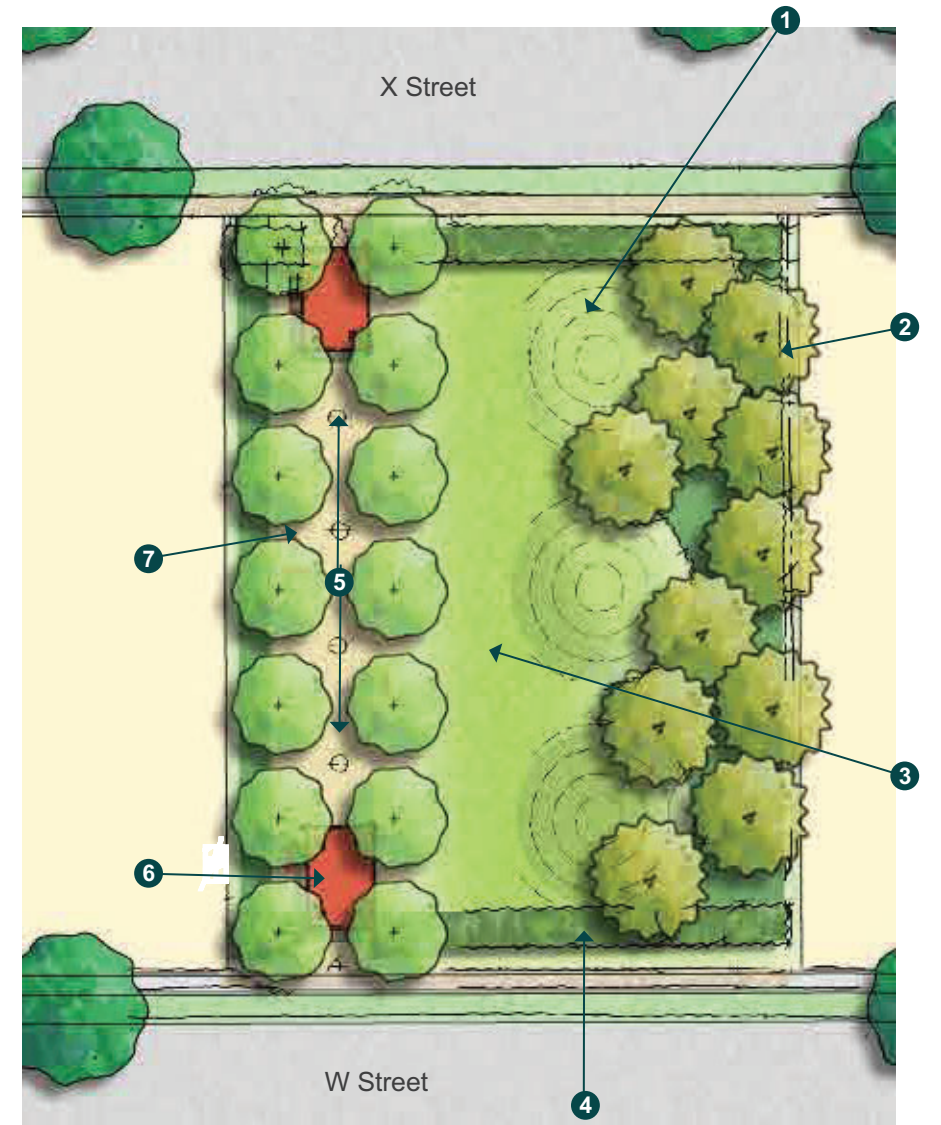
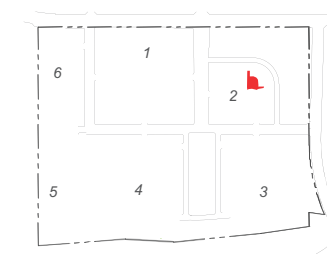
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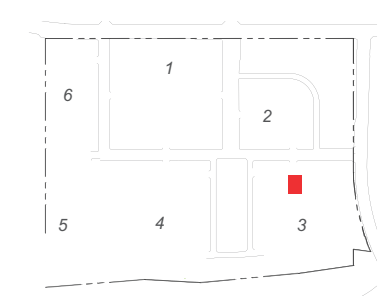
Neighborhood One Park



Neighborhood Two Park



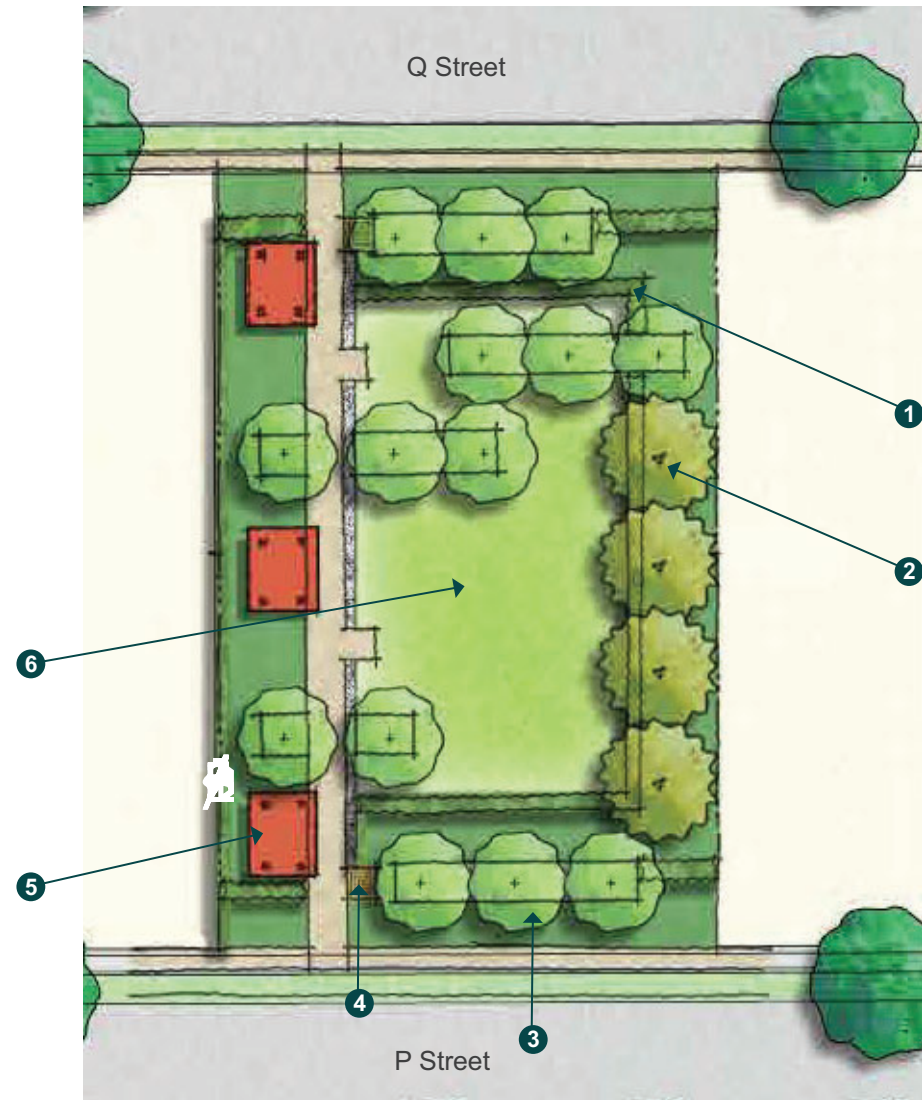
Neighborhood Three Park



LSA

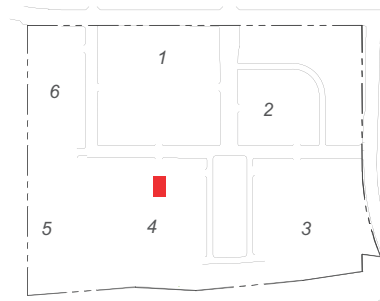


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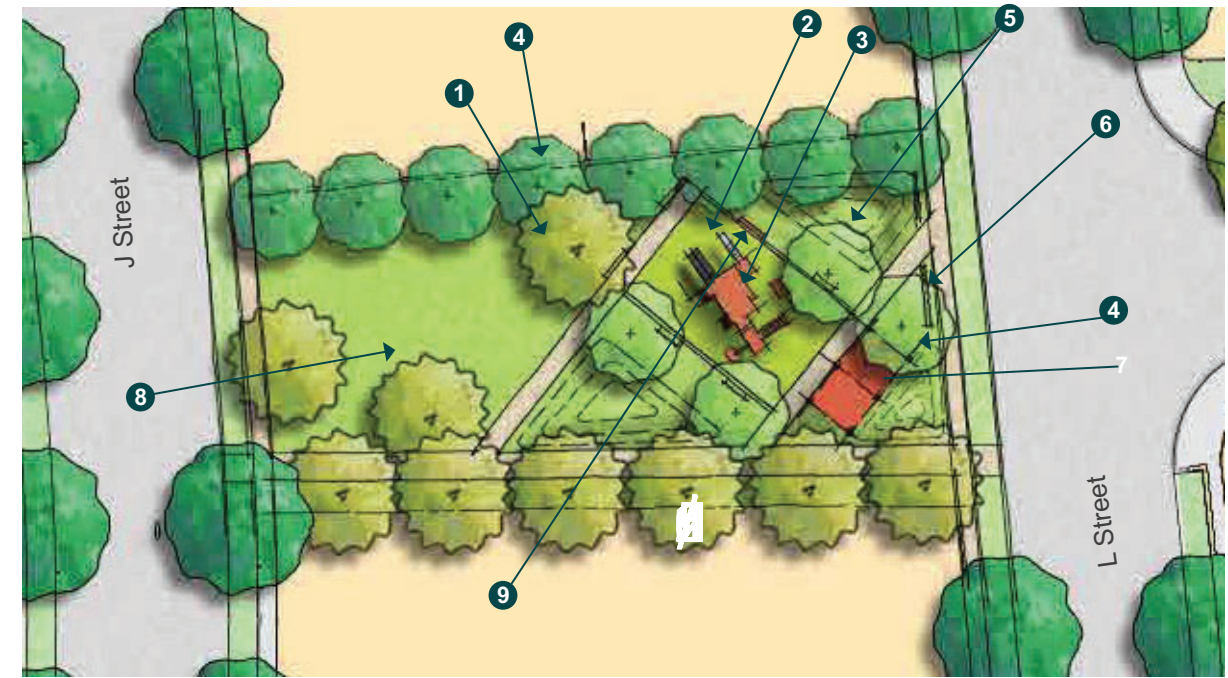


LEGEND

- 1 Low Hedge
- 2 Accent Trees
- 3 Canopy Trees
- 4 Accent Feature
- 5 Shade Structures with Picnic Tables
- 6 Open Lawn

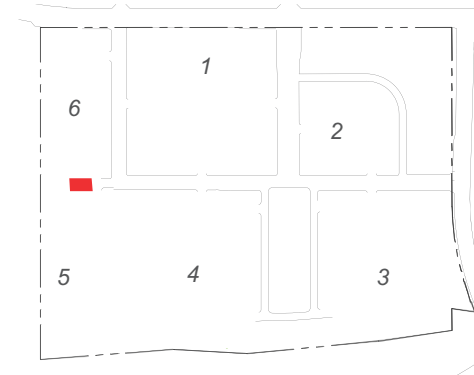


Neighborhood Four Park



LEGEND

- 1 Accent Trees
- 2 Play Surface
- 3 Play Equipment
- 4 Canopy Tree
- 5 Turf Mounds
- 6 Low Decorative Wall
- 7 Shade Structure with Picnic Tables
- 8 Open Lawn
- 9 Benches



Neighborhood Five Park

LSA



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Table 4.15.E: Public Park Credit

Park Name	Description ¹	Acreage	Public Park Credit
Central Park	Private park located in the center of the Master Plan	2.29	2.634
Private Recreational Center	Private clubhouse located in the center of the Master Plan	2.5	0.625
Neighborhood One Mini Park	Private park located in the center of the neighborhood	0.5	0.575
Neighborhood Two Mini Park	Private park located in the center of the neighborhood	0.54	0.621
Neighborhood Three Mini-Park	Private park located in the center of the neighborhood	0.52	0.598
Neighborhood Four Mini-Park	Private park located in the center of the neighborhood	0.52	0.598
Neighborhood Five Mini-Park	Private park located in the center of the neighborhood	0.54	0.621
Neighborhood Park	Private park located on the southern edge of the Project site	3.59	4.129
Restoration Area Trail	Internal trail system connecting Bake Parkway along "A" Street and extending through "B" and "C" Streets to the Serrano Creek Trail.	0.8	0.92
Total Acreage		8.8	11.32
Total Public Park Credit Required			11.37
Park Credit Shortage			0.05

Note: Based on Lake Forest Municipal Code Section 7.38.040 and subject to the Nakase Development Agreement, 1.15 acres of park credit per acre would be granted for public park creation, and 0.25 acre of park credit per acre would be granted for a private park/recreation center facility of 0.5 acre or greater in size.

¹ All parks are private but are open for public use, including the Restoration Area Trail.

ac = acre(s)

Residents are far more likely to use an on-site amenity that is a walkable distance than to drive to more distant facilities. Furthermore, the proposed senior affordable-housing development would generate minimal demand on park facilities such as tot lots, playgrounds, soccer fields, baseball diamonds, and basketball courts, which are designed primarily for use by children and younger adults. Therefore, the park and recreational facilities offered by the proposed Project are expected to offset most of the increased demand on park and recreational facilities generated by the increased population. Additionally, as discussed in the Project Description, the Homeowner’s Association (HOA) would also maintain the parkland proposed as part of the proposed Project in perpetuity, thereby offsetting the need for maintenance and upkeep of park and recreational facilities.

In summary, the proposed Project would create demand for 11.37 ac of park dedication based on the City’s Municipal Code. The proposed Project would construct 11.32 ac of public park. Any shortages in parkland dedication requirements would be offset by the payment of in-lieu fees in accordance with Lake Forest Municipal Code Section 7.38.090(D). RCM REC-1 requires the Project Applicant/Developer to dedicate land or pay in lieu fees instead of or in combination with the dedication of land, so long as the fees are equal to the value of parkland that would otherwise be dedicated. Furthermore, in order to avoid the deterioration of the proposed parks and ensure ongoing public access to and maintenance of on-site parks, Mitigation Measure 4.15.1 requires that on-site parks be maintained in perpetuity by the HOA on the Project site. The proposed Project would also increase use of existing off-site recreation resources, but any increase is not anticipated to be substantial due to the variety of on-site recreation uses and the greater accessibility of on-site uses.

Therefore, the provision of park and recreational facilities within the Project site would be sufficient for the demand of the future residents of the Project and consistent with the City's Municipal Code; as a result, existing public park and recreational facilities would not be adversely impacted or be substantially degraded by the project's population. Impacts would therefore be less than significant with incorporation of RCM REC-1 and Mitigation Measure 4.15.1.

Threshold 4.14.2: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact. The proposed Project would result in new residential development and a demand for new recreational facilities. The proposed Project includes the construction of both private and public recreational facilities on site, as detailed above. These recreational facilities are integrated into the proposed Project, and their associated physical environmental impacts are analyzed throughout this EIR. The proposed Project would be consistent with the City's Municipal Code requirements to provide 5 ac of parkland per 1,000 people or pay in lieu-fees in accordance with Lake Forest Municipal Code Section 7.38.090(D). Therefore, there should be no need to construct additional recreational facilities beyond those described in Chapter 3.0 as a result of the proposed Project. Impacts would be less than significant, and no mitigation is required.

4.15.7 Cumulative Impacts

The Project site is located within Lake Forest, and the proposed Project is subject to the City of Lake Forest's Municipal Code Chapter 7.38 requirements for payment of park fees, the dedication of land for park and recreational purposes, or both as outlined in RCM REC-1. Therefore, for purposes of this analysis, the geographic area for potential cumulative impacts on recreational facilities is Lake Forest. The proposed Project, in conjunction with related projects in Lake Forest, would increase Lake Forest's population. However, consistent with the City's Municipal Code requirements, the proposed Project includes on-site recreational facilities for its residents that address increased demand for park facilities and reduce the proposed Project's demand for off-site recreational facilities. With the exception of the private recreation center, all proposed park space would be available to the public. In addition, as required by Mitigation Measure 4.15.1, the HOA would maintain on-site parks and open space in perpetuity. The proposed Project, in conjunction with the cumulative projects in Lake Forest (as listed earlier in Table 4.A in Chapter 4.0), has the potential to increase the population in Lake Forest by approximately 5,002 persons. The cumulative projects would also be subject to Municipal Code requirements for the provision of parkland and/or payment of in-lieu fees. Therefore, the cumulative impact of the proposed Project and the applicable related projects would be less than significant with respect to recreational facilities, and the proposed Project's contribution to a potentially significant cumulative impact on park and recreational facilities would not be cumulatively considerable.

4.15.8 Level of Significance Prior to Mitigation

In order to avoid the deterioration of proposed parks and ensure ongoing public access to and maintenance of on-site parks, Mitigation Measure 4.15.1 is required. The proposed Project would not require the construction or expansion of recreational facilities beyond those proposed as part of the proposed Project.

4.15.9 Mitigation Measures

4.15.9.1 Regulatory Compliance Measure

RCM REC-1: Dedication of Parkland. The Project Applicant/Developer shall comply with the applicable provisions of Chapter 7.38, Dedication of Land for Park Facilities and Payment of In Lieu Fees, of the City's Municipal Code, ~~which requires applicable subdividers to dedicate to the City an amount of land equivalent to 5 ac per 1,000 estimated population for use as park facilities, or pay in-lieu fees instead of or in combination with the dedication of land, so long as the fees are equal to the value of parkland that would otherwise be dedicated.~~

4.15.9.2 Mitigation Measures

Mitigation Measure 4.15.1: Park and Open Space Access and Maintenance. Prior to the first final building inspection ~~issuance of any certificate of occupancy~~, the Project Applicant/Developer shall submit documentation to the Director of the City of Lake Forest Community Development Department, or designee, demonstrating the following:

- The Homeowner's Association (HOA) shall provide for the ongoing maintenance and care of all on-site park and open space facilities.
- With the exception of the on-site private recreation center, all on-site parks shall also be private, but open and accessible to the public. Appropriate signage shall be posted in all on-site parks.
- The HOA shall maintain maintenance records for a period not less than 2 years and shall make the records available to the City of Lake Forest (City) upon request.
- Long-term funding for maintenance and care of on-site recreation, park, and open space facilities shall be funded through fees paid to the HOA. The Project Applicant/Developer, which will set up the HOA, shall oversee that adequate funding for park and open space maintenance is included within the HOA fee structure, including annual maintenance fees and long-term maintenance reserve funds.

- Revisions to the HOA's Covenants, Conditions, and Restrictions (CC&Rs) related to park and open space maintenance shall be prohibited except with the review and approval of the Director of the City of Lake Forest Community Development Department, or designee.

4.15.10 Level of Significance after Mitigation

With incorporation of RCM REC-1 and Mitigation Measure 4.15.1, potential impacts of the proposed Project related to park and recreational resources would be reduced below a level of significance.

4.16 TRANSPORTATION/TRAFFIC

This section analyzes the existing and planned transportation and circulation conditions for the proposed Nakase Nursery/Toll Brothers Project (proposed Project) and the surrounding area, and identifies circulation impacts that may result during, or subsequent to, the development of the proposed Project. The analysis contained in this section is based in part on the *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c), which is provided in Appendix L to this Environmental Impact Report (EIR).

4.16.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Of the 28 comment letters received, 14 included comments related to Transportation/Traffic.

The letter from the Transportation Corridor Agencies (August 14, 2018) requested a map showing the traffic study area. The letter from the City of Irvine (August 14, 2018) requested that the traffic study prepared for the proposed Project include all North Irvine Transportation Mitigation-funded intersections and all City of Irvine intersections and roadway links within these boundaries. In addition, the City of Irvine requested that the traffic study analyze short- and long-term interim year scenarios and future build-out analysis along with the missing segment of Portola Parkway. The letter also suggested clarifying that the proposed Project is part of the Lake Forest Transportation Mitigation fee program.

The letter from the California Department of Transportation (Caltrans) (August 13, 2018) recommended the completion of a Caltrans-formatted Traffic Impact Study and discussion of potential transportation impacts, in addition to the development of a Safe Routes to School program and discussion of the Senior Mobility Program.

The letter from Southern California Edison (SCE) (August 14, 2018) suggests that the EIR analyze traffic impacts associated with project-related utility work.

The letter from Saddleback Valley Unified School District (SVUSD) (July 25, 2018) expressed concern regarding the direct and indirect impacts to SVUSD schools (including traffic, pedestrian safety, bicycle safety, and parking) along with issues raised about traffic conditions during peak hours, vehicle queuing along "BB" street and access points, and pedestrian/bike safety along school routes.

The letter from Loretta Herin (July 25, 2018) expressed concern regarding additional traffic on Bake Parkway. The letter from Bob Holtzclaw (July 25, 2018) expressed concern regarding additional traffic on Bake Parkway. A letter from Jim Johnson (July 25, 2018) expressed concern about additional traffic on Bake Parkway, suggested that Bake Parkways may need to be widened to three or four lanes between Trabuco Road and State Route 241 (SR-241), and suggested evaluation of a traffic signal coordination program along Bake Parkway.

The Letter from Richard Sullivan (July 25, 2018) expressed concern with parking and accidents along Normandale Drive and Oesterman Road. The letter from Sue Nath (July 25, 2018) expressed concern about additional traffic on Bake Parkway. The letter from Charles Larson (August 4, 2018) expressed concern about school-related traffic impacts, particularly at Rancho Parkway and Bake Parkway.

The letter from Andrea Alexander (August 6, 2018) suggested an ordinance to ban trucks and motorcycles on Bake Parkway between Muirlands Boulevard and Trabuco Road and rerouting truck traffic to Alton Parkway. The letter also suggests elimination of tolls on SR-241 at Bake Parkway and Portola Parkway to divert traffic away from Bake Parkway, and the reduction of lanes on Bake Parkway to make Alton Parkway a more desirable route. The commenter was also concerned about the proposed Project's contribution to traffic congestion.

The letter from Judy Esposito (August 6, 2018) expressed concern about potential increases in traffic. The letter from the Autumnwood Homeowner's Association (HOA) (August 8, 2018) requested that the EIR evaluate traffic impacts. Finally, a letter from an Anonymous Sender (August 30, 2018) suggests analysis of circulation throughout the area, north and south, and analysis of a direct route through the Project site from Rancho Parkway south to the Sports Park Complex.

4.16.2 Existing Environmental Setting

The Project site is bordered by Bake Parkway and Rancho Parkway to the west and north, respectively, with Serrano Creek to the east. Lake Forest Drive is located just east of Serrano Creek. In the study area, Bake Parkway and Lake Forest Drive are classified by the City of Lake Forest Arterial Highway Plan as Primary Arterials (4-Lane Divided Roadways). Rancho Parkway is a Commercial Street along the northern Project boundary. As discussed in greater detail below, one study area intersection (#29 – Bake Parkway/Jeronimo Road) is operating at an unacceptable level of service (LOS) (i.e., "E" or worse) in the a.m. peak hour in the Existing condition. All other study area intersections are operating at acceptable LOS in the Existing condition.

The Orange County Transportation Authority (OCTA), a public transit agency, serves Lake Forest and the project area with bus service along Bake Parkway and a portion of Dimension Drive (Route 206). Route 177 serves Lake Forest Drive. OCTA periodically reviews and updates its transit service to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments, which may lead to either enhanced or reduced service where appropriate.

Bike lanes along Bake Parkway, Lake Forest Drive, Rancho Parkway, and Rancho Parkway South are included in the City of Lake Forest General Plan. In addition, Serrano Creek Trail starts at Serrano Creek Park, southerly to the Nakase Property site, and extends northerly to the Limestone/Whiting Ranch Wilderness Park. This multipurpose trail accommodates running, walking, equestrian uses, and biking.

4.16.3 Regulatory Setting

4.16.3.1 Federal Regulations

No relevant federal transportation/traffic regulations apply to the proposed Project.

4.16.3.2 State Regulations

Senate Bill 743. On December 28, 2018, the California Office of Administrative Law cleared the revised *State CEQA Guidelines* for use. Among the changes to the *State CEQA Guidelines* was removal of vehicle delay and LOS from consideration under the California Environmental Quality Act (CEQA). With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT). Lead agencies are allowed to opt in to the revised transportation guidelines, but the new guidelines must be used starting July 1, 2020.

The City has not yet established thresholds related to VMT. However, the State has provided technical guidelines for the implementation of Senate Bill (SB) 743, which identifies potential thresholds against which to measure the proposed Project's impacts related to VMT.

The Technical Advisory for Evaluating Transportation Impacts Under CEQA provides the following guidance:

“Recommended threshold for residential projects: A proposed Project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the SCS for that city, and should be consistent with the SCS.”

4.16.3.3 Regional Regulations

Orange County Congestion Management Program. OCTA is a multimodal transportation agency that began in 1991 with the consolidation of seven separate agencies. OCTA serves Orange County residents and travelers by providing: countywide bus and paratransit service; Metrolink rail service; the 91 Express Lanes; freeway, street, and road improvement projects; individual and company commuting solutions; motorist aid services; and regulation of taxi operations. State law requires that a Congestion Management Program (CMP) be developed, adopted, and updated biennially for every county that includes an urbanized area, and requires that it include every city and the county government within that county. As the Congestion Management Agency for Orange County, OCTA is responsible for implementing the Orange County CMP.

OCTA adopted the CMP in 1991 to reduce traffic congestion and to provide a mechanism for coordinating land use and development decisions in Orange County. Compliance with the CMP requirements ensures a city's eligibility to compete for State gas tax funds for local transportation projects.

Within Lake Forest, the CMP Highway System includes two arterials: El Toro Road and Trabuco Road. The intersections of El Toro Road/Trabuco Road and El Toro Road/Interstate 5 (I-5) ramps are the only CMP intersections in Lake Forest. The intersection of El Toro Road/Trabuco Road is a study intersection.

Based on CMP requirements, a Traffic Impact Analysis (TIA) is required for CMP purposes for any proposed development generating 2,400 or more daily trips, with the exception of developments that will directly access a CMP Highway System roadway segment, for which the threshold for requiring a TIA is reduced to 1,600 or more trips per day. The proposed Project is estimated to generate a total of ~~8,739~~ 8,789 daily trips. Thus, the proposed Project requires a TIA for CMP purposes.

Based on CMP requirements, the extent of the study area for a TIA is determined by comparing a project's daily trips on a CMP roadway segment to the daily LOS E capacity of that segment. The CMP requires that the study area for a project extend far enough to cover any CMP roadway segment on which the project traffic would represent 3 percent or more of the roadway segment's LOS E capacity.

4.16.3.4 Local Regulations

Lake Forest Traffic Mitigation (LFTM) Program. The LFTM Program was adopted in 2006 and incorporated as Section 7.19 of the City of Lake Forest Municipal Code. The LFTM Program is designed to maintain adequate LOS on the City's arterial street system by planning and funding a set of citywide transportation improvements. The proposed Project was not a planned development project at the time the LFTM Program was adopted; therefore, the proposed Project would not participate in the LFTM Program.

City of Lake Forest General Plan. The City of Lake Forest General Plan contains goals, policies, and plans that are intended to guide land use and development decisions. The Circulation Element contains policies that relate to traffic and circulation.

Six major issues are addressed by the goals, policies, and implementation actions of the Circulation Element: (1) supporting the development of regional transportation facilities; (2) providing a suitable system of City roadways; (3) increasing the use of public transit and non-vehicular modes of travel; (4) ensuring the existence of convenient and suitable parking for vehicles; (5) improving the efficiency of the transportation system and controlling demands on the system; and (6) identifying and utilizing sources of funding for transportation system improvements. Specifically, the City's General Plan includes the following goals and policies:

Goal 1.0: Support for the development of an efficient network of regional transportation facilities.

Goal 2.0: A system of roadways in the community that meets local needs.

Policy 2.1: Provide and maintain a City circulation system that is in balance with planned land uses in Lake Forest and surrounding areas in the region.

Policy 2.3: Improve the Lake Forest circulation system roadways in concert with land development to ensure adequate levels of service.

Goal 3.0: Increased use of public transportation.

Policy 3.1: Promote the provision of public transit facilities within areas of major development.

Policy 3.3: Encourage the provision of special transit services in Lake Forest.

Policy 3.4: Promote access and public transit service between Lake Forest and regional-serving transportation centers.

Goal 4.0: Promotion of non-vehicular modes of travel.

Policy 4.1: Promote the provision of non-vehicular circulation within Lake Forest.

Policy 4.2: Provide and maintain a non-vehicular component of the Lake Forest overall circulation system that supports bicycles, equestrians, and pedestrians and is coordinated with those of other service districts in Lake Forest and with adjacent jurisdictions.

Policy 4.3: Improve pedestrian access from neighborhoods to commercial areas.

Goal 5.0: Convenient and suitable parking facilities for motorized and non-motorized vehicles.

Policy 5.1: Require sufficient off street parking for all land uses and maximize the use of parking facilities in Lake Forest.

Policy 5.2: Eliminate the use of on street parking on identified arterial streets where maximum traffic flow is desired.

Policy 5.3: Promote the provision of access between the parking areas of adjacent properties along arterial roadways to improve overall traffic flow.

Goal 6.0: Maximized transportation system efficiency.

Policy 6.1: Improve operational measures of the traffic system designed to maximize the efficiency of the system while minimizing delay and congestion.

Policy 6.2: Improve intersection capacity at key intersections to improve traffic flow.

Goal 7.0: Utilization of various financing methods to improve the overall transportation system.

Policy 7.1: Utilize available financing methods and sources of funding to make necessary improvements to the overall transportation system in Lake Forest.

Policy 7.3: Maintain the transportation standards required to qualify for revenue from the Congestion Management Plan and the Revised Traffic Improvement and Growth Management Ordinance (Measure M).

City of Lake Forest Municipal Code. Guidelines and provisions related to traffic and circulation are addressed in Chapter 12 (Vehicles and Traffic) of the City's Municipal Code. Chapter 9 addresses parking.

Chapter 12.04, General Provisions and Administration:

Section 12.04.020: Traffic Manual. To guide the application of the laws contained in the City's Traffic Ordinance not in the California Vehicle Code, the City adopted the California Manual on Uniform Traffic Control Devices (California MUTCD), as it may be amended from time to time by the California Department of Transportation. The California MUTCD defines engineering policies, procedures, and interpretations of traffic engineering practice.

Section 12.04.040: Traffic Administration. It shall be the general duty of the Director of Public Works/City Engineer or designee to determine the installation, design, operation, and maintenance of traffic-control devices, design and/or review traffic flow systems and appurtenances, conduct engineering analyses of traffic accidents; devise remedial measures; conduct engineering and traffic investigations of traffic conditions. The Director of Public Works/City Engineer shall also cooperate with the California Highway Patrol, the Orange County Sheriff's Department, the Orange County Fire Authority, and other agencies as appropriate in the development of ways and means to improve traffic conditions and maximize traffic safety.

North Irvine Transportation Mitigation Program. According to Section 6-3-701 of the City of Irvine Municipal Code, the North Irvine Transportation Mitigation Program (NITM Program) was established for the purpose of providing funding for the coordinated and phased installation of required traffic and transportation improvements required under CEQA documents previously certified or adopted by the City of Irvine in connection with land use entitlements for City Planning Areas 1, 2, 5, 6, 8, 9, 30, 40 and 51. Portions of City Planning Areas 1, 2, 5, 6, 8, 9, 30, 40 and 51 are located in Irvine and portions are located outside Irvine but within the City's sphere of influence.

4.16.4 Methodology

The TIA prepared for the proposed Project is consistent with the objectives and requirements of the City, the Orange County CMP, Caltrans methodology, and applicable CEQA provisions.

4.16.4.1 Analysis Scenarios and Study Area

The traffic analysis has evaluated weekday a.m. peak-hour (7:00 a.m. to 9:00 a.m.) and weekday p.m. peak-hour (4:00 p.m. to 6:00 p.m.) traffic conditions at study area intersections for the following analysis scenarios, which are further described below:

- Existing (2017) Conditions
- Existing Plus Project Conditions
- Interim Year Cumulative 2020 Without Project
- Interim Year Cumulative 2020 With Project
- 2040 General Plan Cumulative With Current Approved Project Land Use, Without Portola Westerly Extension (including the five intersection improvement scenarios listed below)
- 2040 General Plan Cumulative With Project, Without Portola Westerly Extension (including the five intersection improvement scenarios listed below)
- 2040 General Plan Cumulative With Current Approved Project Land Use, With Portola Westerly Extension (including the five intersection improvement scenarios listed below)
- 2040 General Plan Cumulative With Project, With Portola Westerly Extension (including the five intersection improvement scenarios listed below)

In addition, all of the 2040 General Plan scenarios include an analysis of these five intersection improvement alternatives:

1. **Intersection Alternative Scenario #1:** The City's current baseline model including all of the LFTM Program improvements, North Irvine Transportation Mitigation (NITM) Program improvements, and Foothill Circulation Phasing Plan (FCPP) improvements.
2. **Intersection Alternative Scenario #2:** Scenario #1 without three (3) LFTM Program improvements in Irvine at intersections of Alton Parkway/Irvine Boulevard (#25), Bake Parkway/Rockfield Boulevard (#31), and Lake Forest Drive and I-5 southbound ramps/Avenida de la Carlota (outside the study area)
3. **Intersection Alternative Scenario #3:** Scenario #2 without the second southbound right turn on El Toro Road and Portola Parkway/Santa Margarita Parkway (#22)
4. **Intersection Alternative Scenario #4:** Scenario #2 without the fourth westbound through lane on Bake Parkway and Trabuco Road/Irvine Boulevard (#27)
5. **Intersection Alternative Scenario #5:** Scenario #2 without both the second southbound right turn on El Toro Road and Portola Parkway/Santa Margarita Parkway (#22), and the fourth westbound through lane on Bake Parkway and Trabuco Road/Irvine Boulevard (#27).

Figure 4.16.1 and Table 4.16.A identify the study area intersections. Off-site study area intersections are generally signalized, except for the intersection of Orchard Road/Bake Parkway.

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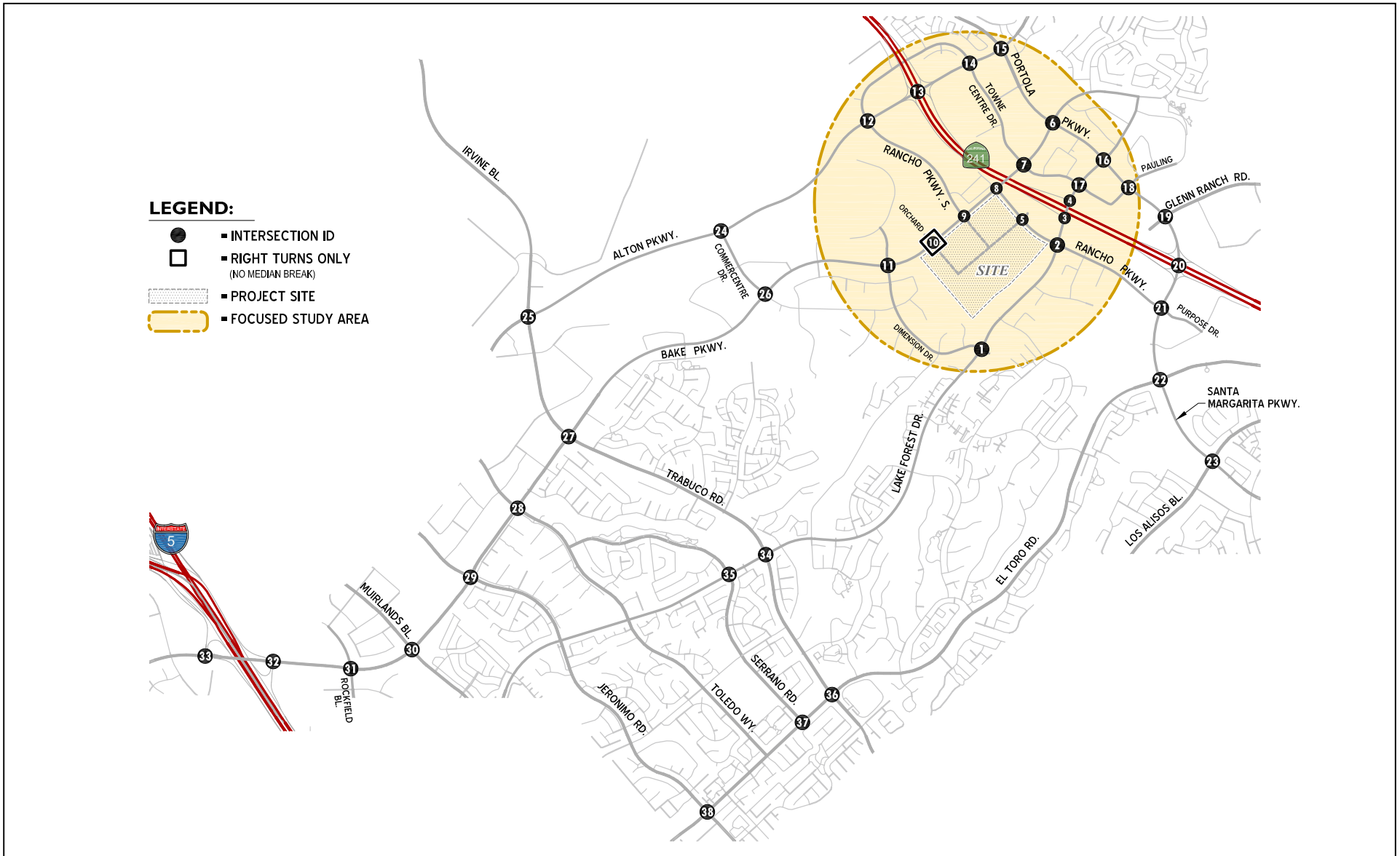


FIGURE 4.16.1

LSA



NO SCALE

SOURCE: Urban Crossroads

Nakase Nursery/Toll Brothers
Study Area Intersections

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Table 4.16.A: Study Intersections

#	Intersection	Jurisdiction	LOS Criteria
1	Lake Forest Drive/Dimension Drive	Lake Forest	D
2	Lake Forest Drive/Rancho Parkway	Lake Forest (LFTM)	D
3	Lake Forest Drive/SR-241 SB Off-Ramp	Caltrans	D
4	Lake Forest Drive/SR-241 NB On-Ramp	Caltrans	D
5	Corridor Center/Rancho Parkway	Lake Forest	D
6	Bake Parkway/Portola Parkway	Lake Forest (LFTM)	D
7	Bake Parkway/Towne Center Drive	Lake Forest	D
8	Bake Parkway/Rancho Parkway	Lake Forest	D
9	Bake Parkway/Rancho Parkway South	Lake Forest	D
10	Bake Parkway/Orchard Road (unsignalized)	Lake Forest	D
11	Dimension Drive/Bake Parkway	Lake Forest	D
12	Alton Parkway/Rancho Parkway South	Lake Forest	D
13	Alton Parkway/SR-241 Ramps	Caltrans	D
14	Alton Parkway/Towne Centre Drive	Lake Forest	D
15	Alton Parkway/Portola Parkway	Lake Forest	D
16	Lake Forest Drive/Portola Parkway	Lake Forest	D
17	Lake Forest Drive/Towne Centre Drive	Lake Forest	D
18	Towne Centre Drive/Portola Parkway	Lake Forest	D
19	Glenn Ranch Road/Portola Parkway	Lake Forest	D
20	Portola Parkway/SR-241 Ramps	Caltrans	D
21	Portola Parkway/Rancho Parkway	Lake Forest	D
22	El Toro Road/Portola Parkway	Lake Forest (LFTM)	D
23	Los Alisos Boulevard/Santa Margarita Parkway	Mission Viejo	D
24	Alton Parkway/Commercentre Drive	Lake Forest	D
25	Alton Parkway/Irvine Boulevard	Irvine (LFTM/NITM)	E
26	Bake Parkway/Commercentre Drive	Lake Forest	D
27	Bake Parkway/Irvine Boulevard-Trabuco Road	Irvine / Lake Forest (LFTM/NITM)	E
28	Bake Parkway/Toledo Way	Irvine / Lake Forest	D
29	Bake Parkway/Jeronimo Road	Irvine / Lake Forest (LFTM/NITM)	D
30	Bake Parkway/Muirlands Boulevard	Irvine	D
31	Bake Parkway/Rockfield Boulevard	Irvine	D
32	Bake Parkway/I-5 NB Ramps	Caltrans	E
33	Bake Parkway/I-5 SB Ramps	Caltrans	E
34	Lake Forest Drive/Trabuco Road	Lake Forest	D
35	Lake Forest Drive/Serrano Road	Lake Forest	D
36	El Toro Road/Trabuco Road	Lake Forest / CMP	E
37	El Toro Road/Serrano Road	Lake Forest	D
38	El Toro Road/Jeronimo Road	Lake Forest	D

Source: *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c)

Caltrans = California Department of Transportation
 CMP = Congestion Management Program intersection
 I-5 = Interstate 5
 LFTM = Lake Forest Transportation Mitigation Program intersection
 LOS = level of service

NB = northbound
 NITM = North Irvine Transportation Mitigation Program intersection
 SB = southbound
 SR-241 = State Route 241

4.16.4.2 Intersection Level of Service Methodology

Intersection Capacity Utilization (ICU) Methodology. Stantec Consulting prepared the traffic volume forecasts using the Lake Forest Traffic Analysis Model (LFTAM). For signalized intersections in the City and nearby jurisdictions (City of Irvine and City of Mission Viejo), the ICU method is used to determine intersection performance. To calculate the ICU value for an intersection, the volume of traffic using the intersection is compared with the capacity of the intersection.

The term "level of service" (LOS) describes traffic operations of roadway facilities. LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A (representing completely free-flow conditions) to LOS F (representing breakdown in flow resulting in stop-and-go conditions). LOS E represents operations at or near capacity, which is an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow. For signalized intersections, LOS is directly related to the volume-to-capacity (v/c) ratios and is correlated to an LOS designation as described in Table 4.16.B.

Table 4.16.B: LOS/ICU Value Comparison

Level of Service	Intersection Capacity Utilization
A	< 0.60
B	0.61–0.70
C	0.71–0.80
D	0.81–0.90
E	0.91–1.00
F	> 1.00

Source: *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c)

ICU = intersection capacity utilization

LOS = level of service

A number of assumptions are required regarding specific input values to the ICU methodology. The specific assumptions include the use of a saturation flow rate of 1,700 vehicles per lane per hour (vplph). No capacity adjustments are applied for protected movements with dedicated lanes (including both right and left turns). A lost time factor of 5 percent is applied to the ICU calculations. Finally, a "de facto" right-turn lane is assumed to exist when the outermost through lane is 19 feet (ft) or greater in width and parking is prohibited.

Highway Capacity Manual (HCM) Methodology. The HCM methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control.

HCM methodology is used for the signalized intersections under Caltrans jurisdiction as well as unsignalized intersections. Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 4.16.C). At two-way or side-street stop-controlled

Table 4.16.C: LOS/HCM Value Comparison

Level of Service	Signalized Intersection Delay (seconds)	Unsignalized Intersection Delay (seconds)
A	≤10.0	≤10.0
B	>10.0 and ≤20.0	>10.1 and ≤15.0
C	>20.0 and ≤35.0	>15.1 and ≤25.0
D	>35.0 and ≤55.0	>25.1 and ≤35.0
E	>55.0 and ≤80.0	>35.1 and ≤50.0
F	>80.0	>50.0

Source: *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c).
HCM = Highway Capacity Manual
LOS = level of service

intersections, LOS is calculated for each controlled movement and for the left-turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop-controlled intersections and signalized intersections, LOS is computed for the intersection as a whole. However, if traffic volume at a signalized intersection exceeds the green light capacity of the traffic signal, then the intersection is determined to operate at LOS F regardless of the average vehicle delay.

4.16.4.3 Potentially Significant Traffic Impact Criteria

Per the City’s General Plan, LOS D (i.e., peak-hour ICU less than or equal to 0.90) or better is generally considered acceptable at intersections. However, at Critical Intersections, LOS E (i.e., peak-hour ICU less than or equal to 1.00) is acceptable with the requirement that regular monitoring takes place. Critical Intersections are a set of identified intersections that are either deficient today or are estimated to be deficient in the future even with reasonable improvements, but are considered Principal Intersections and critical to the function of the overall roadway network.

Per the City’s General Plan, a project impact occurs when a study area intersection exceeds the acceptable LOS and the impact of the development is greater than 0.01. Project mitigation will be required to bring back the intersection v/c to 0.90 or baseline if the baseline is greater than 0.90 (or 1.00 at Critical Intersections).

For nearby jurisdictions (City of Irvine, City of Mission Viejo, and Caltrans), LOS D or better is generally considered acceptable at intersections, with the exception of the following locations where LOS E is acceptable: Bake Parkway/I-5 ramp intersections (#32 and #33), Alton Parkway/Irvine Boulevard (#25), Bake Parkway/Irvine Boulevard–Trabuco Road (#27), and El Toro Road/Trabuco Road (#36 – CMP intersection).

For ICU greater than the acceptable LOS, mitigation of the project contribution is required to bring the intersection back to an acceptable LOS or to the “without” project conditions if the project contribution is greater than 0.03 at CMP locations outside the City of Irvine (the impact threshold

specified in the CMP), 0.02 or greater at locations in the Cities of Irvine and Mission Viejo, and greater than 0.01 in the City of Lake Forest.

4.16.5 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed Project may have a significant adverse impact with respect to transportation if it would:

Threshold 4.16.1: Conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

Threshold 4.16.2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision (b);

Threshold 4.16.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

Threshold 4.16.4: Result in inadequate emergency access.

The Initial Study, included as Appendix A, identified potentially significant impacts related to City of Lake Forest performance criteria and potentially hazardous design features. Thresholds related to CEQA Guidelines section 15064.3 and emergency access were not evaluated in the Initial Study. Therefore, all thresholds are analyzed in this EIR.

4.16.6 Project Impacts

Threshold 4.16.1: Would the Project conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Potentially Significant.

Project Construction. The proposed Project would be implemented over an estimated period of 67 months (approximately 5.5 years). Demolition and site preparation would span approximately 3 months, and grading would span approximately 12 months. Paving and infrastructure would take approximately 4 months and 12 months, respectively, and would occur concurrently. Building construction would be implemented over an estimated period of 46 months. Project build out is anticipated to occur in 2025.

The site-specific construction fleet would vary due to actual construction needs, but construction vehicle trips would derive from construction workers, vendor deliveries, and material hauling. According to the City of Lake Forest Municipal Code, noise from construction activities is limited to the hours between 7:00 a.m. and 8:00 p.m. on weekdays and on Saturdays. No noise from construction activities is permitted on Sundays or City holidays.

During demolition, the proposed Project would require the demolition of approximately 2,848 tons of asphalt and 1,161 tons of concrete. The total amount of demolished material that is expected for the Project is approximately 4,009 tons of debris. Hauling trips are based on the assumption that a truck can haul 20 tons (16 cubic yards [cy]) of material per load and assumes that one haul truck importing material would also have a return trip. Therefore, demolition is anticipated to require approximately 401 hauling trips in order to remove 4,009 tons of debris. Over a 66-day period, the Project demolition activity therefore equates to approximately 3 trucks daily (for a total of 6 hauling trips per day) and 15 worker trips per day. In addition, the Project is expected require 150,000 cy of soil export. As such, the Project is expected to generate 18,750 hauling trips in order to export 150,000 cy of soil. Hauling trips are based on the assumption that a truck can haul 20 tons (16 cy) of material per load and assumes that one haul truck exporting material will also have an inbound trip, as noted above. As such, the Project is expected to generate 18,750 hauling trips in order to export 150,000 cy of soil. This potential grading activity equates to approximately 70 hauling trips per day and 20 worker trips per day over a 269-day period. Soil export activity will not be permitted during peak commute hours from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

The infrastructure, building construction, and architectural coating activity equates to approximately 143 medium-duty truck trips per day, 143 heavy-duty truck trips per day, and 1,034 worker trips per day over a 1,001-day period. The delivery and removal of heavy equipment is recommended to occur outside of the morning and evening peak hours in order to have nominal impacts to traffic and circulation near the vicinity of the Project. With time-of-day restrictions, it is anticipated that traffic impacts associated with the delivery and removal of heavy equipment are less than significant.

Construction employee trips are estimated based on the number of construction workers anticipated to be on site throughout the various stages of construction. Each construction worker is assumed to drive to and from the construction site each day. It has been assumed that construction workers would arrive up to 30 minutes prior to the workday and would leave up to 30 minutes after the workday ends. It is anticipated that the majority of construction employees would arrive between 6:00 a.m. and 7:00 a.m., and depart between 3:30 p.m. and 4:30 p.m.

During all phases of construction, construction trips would be greater than the number of trips associated with the existing nursery operations, but fewer than the number of trips associated with operation of the proposed Project. The most intense level of traffic activity generated by the Project construction phases is estimated to occur in conjunction with infrastructure, building construction, and architectural coating. In comparison to a single car, a truck affects roadway operations based upon several variables (e.g., headway, speed, density). In order to account for these effects, truck volume is converted to passenger car equivalent (PCE) to represent traffic flow. The Project construction activities associated with infrastructure, building construction, and architectural coating could amount to the trips shown in Table 4.16.D.

Table 4.16.D: Infrastructure, Building Construction, and Architectural Coating Trips

Trip Category	Daily Vehicle Trips	PCE Factor	PCE Daily Trips
Medium Truck	143	2	286
Heavy Truck	143	3	429
Worker	1,034	1	1,034
Total	1,320		1,749

Source: *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c)
PCE = passenger car equivalent

These estimated daily construction traffic levels exceed the traffic generated by the existing nursery, which ranges from 127 to 332 trip-ends per day. However, traffic operations during the proposed construction phases of the Project (including vehicle trips associated with construction employees, export of soil, import of construction materials, etc.) are anticipated to occur during off-peak periods. Nevertheless, study area intersections may potentially be impacted by workers and trucks during the various construction phases. More specifically, while the traffic impacts associated with the volume of traffic during construction would be less than the traffic impacts determined through the analysis of Project operation, construction activities would have the potential to reduce roadway capacity. Mitigation Measure 4.16.1 would reduce potential impacts associated with temporary construction traffic, including haul trips and equipment deliveries. Mitigation Measure 4.16.1 requires the development of a Construction Traffic Management Plan (CTMP) that would be required and approved by the City of Lake Forest Director of Public Works/City Engineer. In general, the CTMP would ensure that to the extent practicable, construction traffic would access the Project site during off-peak hours, and that construction traffic would be routed to avoid travel through, or proximate to, sensitive land uses. With incorporation of Mitigation Measure 4.16.1, potential impacts associated with construction traffic would be reduced to a less than significant level.

Project Operation.

City Program, Plan, or Ordinance: Roadway. Existing peak-hour traffic operations have been evaluated for the study intersections based on the analysis methodologies described above. Table 4.16.E identifies the existing LOS for the study intersections. One study area intersection (#29 - Bake Parkway/Jeronimo Road) operates at an unacceptable LOS (LOS E or worse) during the a.m. peak hour in the Existing condition.

The TIA calculates the potential trip generation for the project using rates established in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition). As shown in Table 4.16.F, the proposed Project is anticipated to generate a total of approximately 8,789 trip-ends per day with 1,202 vehicles per hour during the a.m. peak hour, and 879 vehicles per hour during the p.m. peak hour. It should be noted that Table 4.16.F provides a conservative analysis of the Project’s new trips without taking credit for existing trip generation at the Project site. The trip distribution patterns for the proposed Project were determined in conjunction with the City traffic modeling consultant and City staff during

Table 4.16.E: Summary of Peak-Hour Intersection Operation – Existing Conditions

Int. #	Intersection	AM Peak Hour		PM Peak Hour	
		ICU/Delay	LOS	ICU/Delay	LOS
1	Lake Forest Drive/Dimension Drive	0.41	A	0.52	A
2	Lake Forest Drive/Rancho Parkway	0.42	A	0.57	A
3	Lake Forest Drive/SR-241 SB Off-Ramp	0.29	A	0.36	A
4	Lake Forest Drive/SR-241 NB On-Ramp	0.24	A	0.28	A
5	Corridor Center/Rancho Parkway	0.25	A	0.27	A
6	Bake Parkway/Portola Parkway	0.42	A	0.49	A
7	Bake Parkway/Towne Center Drive	0.39	A	0.49	A
8	Bake Parkway/Rancho Parkway	0.44	A	0.55	A
9	Bake Parkway/Rancho Parkway South	0.51	A	0.52	A
10	Bake Parkway/Orchard Road (unsignalized)	14.0 sec	B	13.0 sec	B
11	Dimension Drive/Bake Parkway	0.40	A	0.56	A
12	Alton Parkway/Rancho Parkway South	0.48	A	0.39	A
13	Alton Parkway/SR-241 Ramps	0.32	A	0.39	A
14	Alton Parkway/Towne Centre Drive	0.25	A	0.31	A
15	Alton Parkway/Portola Parkway	0.41	A	0.27	A
16	Lake Forest Drive/Portola Parkway	0.36	A	0.49	A
17	Lake Forest Drive/Towne Centre Drive	0.30	A	0.41	A
18	Towne Centre Drive/Portola Parkway	0.38	A	0.55	A
19	Glenn Ranch Road/Portola Parkway	0.41	A	0.48	A
20	Portola Parkway/SR-241 Ramps	0.35	A	0.38	A
21	Portola Parkway/Rancho Parkway	0.42	A	0.50	A
22	El Toro Road/Portola Parkway	0.62	B	0.65	B
23	Los Alisos Boulevard/Santa Margarita Parkway	0.75	C	0.73	C
24	Alton Parkway/Commercentre Drive	0.37	A	0.43	A
25	Alton Parkway/Irvine Boulevard	0.47	A	0.42	A
26	Bake Parkway/Commercentre Drive	0.50	A	0.67	B
27	Bake Parkway/Irvine Boulevard-Trabuco Road	0.63	B	0.68	B
28	Bake Parkway/Toledo Way	0.70	B	0.59	A
29	Bake Parkway/Jeronimo Road	0.94	E	0.77	C
30	Bake Parkway/Muirlands Boulevard	0.56	A	0.67	B
31	Bake Parkway/Rockfield Boulevard	0.56	A	0.68	B
32	Bake Parkway/I-5 NB Ramps	0.84	D	0.67	B
33	Bake Parkway/I-5 SB Ramps	0.67	B	0.73	C
34	Lake Forest Drive/Trabuco Road	0.59	A	0.67	B
35	Lake Forest Drive/Serrano Road	0.54	A	0.53	A
36	El Toro Road/Trabuco Road	0.64	B	0.62	B
37	El Toro Road/Serrano Road	0.53	A	0.47	A
38	El Toro Road/Jeronimo Road	0.69	B	0.80	C

Source: *Nakase Property Traffic Impact Analysis (Urban Crossroads 2019c)*.

Notes: ICU value is expressed in volume-to-capacity ratio.

Average delay is expressed in seconds of delay per peak-hour vehicle.

LOS shown in **Bold** with gray shading indicates unacceptable LOS.

I-5 = Interstate 5

NB = northbound

ICU = Intersection Capacity Utilization

SB = southbound

Int. = intersection

SR-241 = State Route 241

LOS = level of service

Table 4.16.F: Project Trip Generation Summary

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates¹									
Elementary School (520)	–	Student	1.89	0.36	0.31	0.67	0.08	0.09	0.17
Single Family Detached (210)	–	DU	9.44	0.19	0.55	0.74	0.62	0.37	0.99
Senior Adult Housing – Attached (252)	–	DU	3.70	0.07	0.13	0.20	0.14	0.12	0.26
Neighborhood Park (411) ²	–	Acre	5.00	0.30	0.21	0.51	0.28	0.23	0.51
Central Park (411) ²	–	Acre	30.00	1.18	0.82	2.00	1.65	1.35	3.00
Trip Generation									
<i>Zone 1</i>									
Single Family Detached (210)	182	DU	1,718	35	100	135	113	67	180
Senior Adult Housing – Attached (252)	101	DU	374	7	13	20	14	12	26
Neighborhood Park (411)	0.5	Acre	3	0	0	0	0	0	0
Subtotal			2,095	42	113	155	127	79	206
<i>Zone 2</i>									
Elementary School (520)	1,000	Student	1,890	360	310	670	80	90	170
Single Family Detached (210)	110	DU	1,038	21	61	82	68	41	109
Neighborhood Park (411)	0.3	Acre	2	0	0	0	0	0	0
Subtotal			2,930	381	371	752	148	131	279
<i>Zone 3</i>									
Single Family Detached (210)	142	DU	1,340	27	78	105	88	53	141
Neighborhood Park (411)	0.4	Acre	2	0	0	0	0	0	0
Central Park (411)	4.8	Acre	144	6	4	10	8	6	14
Subtotal			1,486	33	82	115	96	59	155
<i>Zone 4</i>									
Single Family Detached (210)	241	DU	2,275	46	133	179	149	89	238
Neighborhood Park (411)	0.6	Acre	3	0	0	0	0	0	0
Subtotal			2,278	46	133	179	149	89	238
Net Trip Generation			8,789	503	699	1,202	521	358	879

Source: Nakase Property Traffic Impact Analysis (Urban Crossroads 2019c)

¹ Trip rates are referenced from the Institute of Transportation Engineers *Trip Generation Manual*, 10th Edition (2017).

² Trip rates modified by TIA.

ADT = average daily trips

the traffic study scoping process. They are based upon the LFTAM, combined with Project land use access characteristics and local knowledge of traffic patterns, and project access considerations, such as the locations of right-turn in/out only driveways. Five percent (5%) of trips are anticipated to remain internal to the Project site because of interactions between residential, park, and school uses.

The resulting Project traffic volumes were added to existing traffic volumes, and the intersection LOS was calculated for the Existing Plus Project condition. Table 4.16.G summarizes the intersection analysis results, which indicates that the intersection of Bake Parkway/Jeronimo Road is anticipated to continue to operate at an unacceptable LOS (LOS E or worse) during peak hours with the addition of Project traffic. A change in ICU value of 0.02 indicates a potentially significant impact at this intersection.

Table 4.16.G: Existing Plus Project Intersection Level of Service Summary

Intersection		Existing (2017)				Existing Plus Project				Change With Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	Lake Forest Drive/Dimension Drive	0.41	A	0.52	A	0.42	A	0.52	A	0.01	0.00
2	Lake Forest Drive/Rancho Parkway	0.42	A	0.57	A	0.52	A	0.61	A	0.10	0.04
3	Lake Forest Drive/SR-241 SB Off-Ramp	0.29	A	0.36	A	0.32	A	0.37	A	0.03	0.01
4	Lake Forest Drive/SR-241 NB On-Ramp	0.24	A	0.28	A	0.26	A	0.30	A	0.02	0.02
5	Corridor Center/Rancho Parkway	0.25	A	0.27	A	0.41	A	0.49	A	0.16	0.22
6	Bake Parkway/Portola Parkway	0.42	A	0.49	A	0.44	A	0.50	A	0.02	0.01
7	Bake Parkway/Towne Center Drive	0.39	A	0.49	A	0.42	A	0.50	A	0.03	0.01
8	Bake Parkway/Rancho Parkway	0.44	A	0.55	A	0.47	A	0.57	A	0.03	0.02
9	Bake Parkway/Rancho Parkway South	0.51	A	0.52	A	0.58	A	0.57	A	0.07	0.05
10	Bake Parkway/Orchard Road (unsignalized)	14.0 sec	B	13.0 sec	B	15.9 sec	C	18.3 sec	C	1.9 sec	5.3 sec
11	Dimension Drive/Bake Parkway	0.40	A	0.56	A	0.48	A	0.63	B	0.08	0.17
12	Alton Parkway/Rancho Parkway South	0.48	A	0.39	A	0.51	A	0.39	A	0.03	0.00
13	Alton Parkway/SR-241 Ramps	0.32	A	0.39	A	0.32	A	0.39	A	0.00	0.00
14	Alton Parkway/Towne Centre Drive	0.25	A	0.31	A	0.26	A	0.32	A	0.01	0.01
15	Alton Parkway/Portola Parkway	0.41	A	0.27	A	0.43	A	0.28	A	0.02	0.01
16	Lake Forest Drive/Portola Parkway	0.36	A	0.49	A	0.37	A	0.49	A	0.01	0.00
17	Lake Forest Drive/Towne Centre Drive	0.30	A	0.41	A	0.32	A	0.41	A	0.02	0.00
18	Towne Centre Drive/Portola Parkway	0.38	A	0.55	A	0.38	A	0.56	A	0.00	0.01
19	Glenn Ranch Road/Portola Parkway	0.41	A	0.48	A	0.42	A	0.49	A	0.01	0.01
20	Portola Parkway/SR-241 Ramps	0.35	A	0.38	A	0.35	A	0.38	A	0.00	0.00
21	Portola Parkway/Rancho Parkway	0.42	A	0.50	A	0.45	A	0.52	A	0.03	0.02
22	El Toro Road/Portola Parkway	0.62	B	0.65	B	0.64	B	0.67	B	0.02	0.02
23	Los Alisos Boulevard/Santa Margarita Parkway	0.75	C	0.73	C	0.76	C	0.74	C	0.01	0.01
24	Alton Parkway/Commercentre Drive	0.37	A	0.43	A	0.38	A	0.44	A	0.01	0.01
25	Alton Parkway/Irvine Boulevard	0.47	A	0.42	A	0.47	A	0.43	A	0.00	0.01
26	Bake Parkway/Commercentre Drive	0.50	A	0.67	B	0.54	A	0.71	C	0.04	0.04
27	Bake Parkway/Irvine Boulevard-Trabuco Road	0.63	B	0.68	B	0.65	B	0.70	B	0.02	0.02
28	Bake Parkway/Toledo Way	0.70	B	0.59	A	0.72	C	0.60	A	0.02	0.01
29	Bake Parkway/Jeronimo Road	0.94	E	0.77	C	0.96	E	0.78	C	0.02	0.01
30	Bake Parkway/Muirlands Boulevard	0.56	A	0.67	B	0.56	A	0.68	B	0.00	0.01
31	Bake Parkway/Rockfield Boulevard	0.56	A	0.68	B	0.56	A	0.69	B	0.00	0.01
32	Bake Parkway/I-5 NB Ramps	0.84	D	0.67	B	0.85	D	0.69	B	0.01	0.02
33	Bake Parkway/I-5 SB Ramps	0.67	B	0.73	C	0.68	B	0.76	C	0.01	0.03
34	Lake Forest Drive/Trabuco Road	0.59	A	0.67	B	0.60	A	0.68	B	0.01	0.01
35	Lake Forest Drive/Serrano Road	0.54	A	0.53	A	0.54	A	0.53	A	0.00	0.00
36	El Toro Road/Trabuco Road	0.64	B	0.62	B	0.65	B	0.62	B	0.01	0.00
37	El Toro Road/Serrano Road	0.53	A	0.47	A	0.53	A	0.47	A	0.00	0.00
38	El Toro Road/Jeronimo Road	0.69	B	0.80	C	0.70	B	0.82	D	0.01	0.02

Source: Nakase Property Traffic Impact Analysis (Urban Crossroads 2019c).

Notes: ICU value is expressed in volume-to-capacity ratio.

Average delay is expressed in seconds of delay per peak-hour vehicle.

LOS shown in **Bold** indicates unacceptable LOS.

I-5 = Interstate 5

SR-241 = State Route 241

ICU = Intersection Capacity Utilization

V/C = volume-to-capacity

LOS = level of service

The addition of a second northbound left-turn lane at the intersection of Bake Parkway/Jeronimo Road is included in the LFTM and NITM programs. It should be noted that the proposed Project was not a planned development project at the time the LFTM program was adopted; therefore, the proposed Project cannot participate in the LFTM program. However, sufficient funding is available within the LFTM and NITM programs to construct the physical improvement necessary to mitigate the Project's impact. ~~Nevertheless,~~ Mitigation Measure 4.16.2 requires the ~~City Project Applicant/Developer~~ to construct the improvements if the improvements are not already completed prior to ~~issuance of the first final building inspection certificate of occupancy~~. With implementation of Mitigation Measure 4.16.2, impacts related to potential conflicts with City program, plan, ordinance or policy addressing the circulation system would be reduced below a level of significance.

CMP Program, Plan, or Ordinance: Roadway. Within the study area, Intersection 36 (El Toro Road/Trabuco Road) is monitored in the Orange County CMP. As indicated in Table 4.16.F, this intersection operates at LOS B during the a.m. peak hour and LOS B during the p.m. peak hour in existing conditions. This intersection would continue to operate at LOS B during both the a.m. and p.m. peak hours with the addition of Project traffic. The Project's contribution to intersection ICU is 0.01 or less, which is below the significance threshold established by the Orange County CMP. No mitigation is required.

Caltrans Program, Plan, or Ordinance: Roadway. Table 4.16.A shows that six study intersections are within Caltrans' jurisdiction. The TIA compared the capacity of these intersections to the volume of traffic in Existing, Interim Year Cumulative 2020 conditions, and 2040 General Plan Cumulative conditions. As a result of this analysis, the TIA identified less than significant impacts to the v/c ratio of these Caltrans intersections with implementation of the proposed Project. No mitigation is required.

City Program, Plan, or Ordinance: Transit, Bicycle, and Pedestrian. The proposed Project takes access at existing intersections and would not interfere with transit, bicycle, or pedestrian connectivity. In addition, the Project incorporates pedestrian and bicycle connectivity within the Project site. Therefore, the Project is not anticipated to conflict with program, plan, ordinance or policy addressing the transit, bicycle, and pedestrian facilities.

Summary. The Project's potential impacts to the roadway network during construction would be reduced to a less than significant level with incorporation of Mitigation Measure 4.16.1. The Project's potential impacts to the roadway network upon completion of the Project would be reduced to a less than significant level with incorporation of Mitigation Measure 4.16.2. The Project is not anticipated to have a significant impact to CMP or Caltrans facilities and no mitigation is required. The Project is not anticipated to have a significant impact on transit, bicycle, or pedestrian facilities and no mitigation is required.

Threshold 4.16.2: Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

No Impact. According to *State CEQA Guidelines* Section 15064.3(a), project-related transportation impacts are generally best measured by evaluating the project's VMT. VMT refers to the amount and distance of automobile travel attributable to a project.

State CEQA Guidelines Section 15064.3(b) sets forth criteria for analyzing transportation impacts, with the applicable methodology based on project type, and specifying other criteria for conducting VMT analysis.

For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects located within 0.5 mile (mi) of an existing high-quality transit corridor¹ should be considered to have a less than significant impact. *State CEQA Guidelines* Section 15064.3(b)(2) addresses VMT associated with transportation projects and states that projects that reduce VMT (e.g., pedestrian, bicycle, and transit projects) should be presumed to have a less than significant impact. Subdivision (b)(3) of *State CEQA Guidelines* Section 15064.3 acknowledges that Lead Agencies may not be able to quantitatively estimate VMT for every project type. In these cases, a qualitative analysis may be used. The regulation further states that Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT (*State CEQA Guidelines* Section 15064.3(b)(4)). *State CEQA Guidelines* Section 15064.3(c) states that while an agency may elect to be governed by the provisions of this section immediately, it is not required to perform such analysis until July 1, 2020.

The proposed Project is considered a land use project and is not within 0.5 mi of an existing high-quality transit corridor. Consequently, Section 15064.3 of the *State CEQA Guidelines* is applicable to the proposed Project.

Using the average daily trips (ADT) established in the *Nakase Property Traffic Impact Analysis* (Urban Crossroads 2019c), the California Emissions Estimator Model (CalEEMod) was used to determine existing and post-project VMT. Under existing conditions, the existing nursery generates an annual VMT of 2,698,384 or 10,836.88 VMT per capita. The proposed Project would generate an annual VMT of 26,098,705. This would be 11,322.65 VMT per capita. Compared to existing conditions, the proposed Project would generate a higher annual VMT per capita.

At this time, the City has not established a methodology that would appropriately analyze VMT impacts within its jurisdiction. In addition, the City has not adopted thresholds or standards for assessing potential VMT impacts. Therefore, this information is provided for disclosure purposes only and traffic impacts in this EIR are based on the City's standard LFTAM, which is based on LOS. No mitigation is required.

¹ According to Public Resources Code (PRC) Section 21155(b), a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

Threshold 4.16.3: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Potentially Significant Impact.

Construction. Development of the proposed Project would require excavation of the site; delivery of materials, equipment, and personnel; demolition of the 1,744-square-foot (sf) existing structure on the Project site; undergrounding of utilities; construction of the buildings; and installation of landscaping. Demolition, grading, and building activities would involve the use of standard earthmoving equipment (e.g., loaders, bulldozers, cranes and other related equipment). No blasting or pile driving is proposed. All construction equipment, including construction worker vehicles, would be staged on the Project site for the duration of the construction period to the extent feasible. In addition, as required by Mitigation Measure 4.16.1, large construction equipment would be delivered during off-peak times so as to reduce travel during peak travel periods. Construction workers are anticipated to drive standard vehicles that would not result in incompatible uses. Therefore, because construction equipment would be staged on site for the duration of the construction period and would be delivered during non-peak hours as required by Mitigation Measure 4.16.1, Project construction is not anticipated to result in incompatible uses that increase on-road hazards. No additional mitigation is required.

Operation.

Access and On-Site Circulation. Three existing intersections would provide access to the proposed Project (one traffic signal on Bake Parkway, one unsignalized intersection on Bake Parkway, and one traffic signal on Rancho Parkway). The access analysis presented in the TIA demonstrates that each of these intersections is anticipated to operate at a satisfactory LOS.

“A” Street is essentially the easterly extension of Rancho Parkway South, serving as the Project main entrance. At the intersection of Bake Parkway/Rancho Parkway South, northbound traffic entering the site is accommodated by a separate right-turn lane, and two eastbound travel lanes accommodate traffic inbound to the site along “A” Street. “A” Street includes two travel lanes in each direction divided by a raised median. To efficiently serve residential traffic entering and exiting the site, the landscaped median on “A” Street prohibits eastbound traffic from making left turns onto “BB” Street. Traffic exiting the site is served by westbound dual left-turn lanes, a single westbound through lane, and a separate westbound right-turn lane on “A” Street approaching Bake Parkway.

“C” Street extends into the site from a right-in/right-out intersection (no break in the existing median) with Bake Parkway, which provides one travel lane in each direction through to “B” Street. At the Bake Parkway/“C” Street intersection, northbound traffic entering the site is served by a separate right-turn lane.

“B” Street includes two lanes in each direction between the Corridor Center/Rancho Parkway intersection and the “BB” Street intersection. At the Corridor Center/Rancho

Parkway intersection, the northbound approach on “B” Street is configured with one left-turn lane, and one shared through right lane. Between “BB” Street and “A” Street, the cross section for “B” Street consists of one southbound lane and two northbound lanes to accommodate turning movements related to the school site. Southwest of “A” Street, “B” Street then transitions into a cross section that accommodates one lane in each direction.

At the intersection of “B” Street/Rancho Parkway South, eastbound traffic entering the site is served by a separate right-turn lane, and two southbound travel lanes accommodate traffic inbound to the site along “B” Street. Traffic exiting the site is served by a northbound left-turn lane as well as a northbound shared through/right-turn lane on “B” Street approaching Rancho Parkway at the existing Corridor Center driveway. Because “BB” Street provides exclusive access to the school site, a separate southbound right-turn lane is provided on “B” Street approaching the “B” Street/“BB” Street intersection. At the “B” Street/“BB” Street intersection, a northbound shared through/left-turn lane is provided in addition to a separate northbound through lane.

“B” Street intersects “A” Street at the center of the Nakase Property development. At the “B” Street/“A” Street intersection, separate eastbound left- and right-turn lanes are provided on “A” Street. In the vicinity of the “B” Street/“A” Street intersection, “B” Street includes one southbound lane and two northbound lanes in order to provide flexibility for left-turn movements. The intersections of “B” Street/“T” Street and “B” Street/“S” Street are restricted to right turns only (no median break) near the “B” Street/“A” Street intersection.

On-street parking would not be allowed on “A” Street. Along “T” Street and “S” Street adjacent to the park, on-street parking is accommodated for community and public events. Along “BB” Street adjacent to the school, on-street parking is accommodated for student drop-off and pick-up purposes. Along “B” Street and “C” Street, on-street parking can be accommodated within 22 ft wide single travel lanes.

Mitigation Measure 4.16.3 requires a sight distance analysis for all Project intersections according to the City of Lake Forest Municipal Code and the Caltrans HCM standards and guidelines. The analysis will indicate limited use areas (e.g., low height landscaping), and on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right-in/right-out). With implementation of Mitigation Measure 4.16.3, potential impacts related to geometric design features would be reduced below a level of significance.

Pedestrian Safety. Residential streets within Nakase Property include curb extensions/chokers at intersections to both visually enhance the look and feel of the intersection and to promote pedestrian activity. At key local street intersections, curb extensions have the combined benefits of aesthetic appeal and accommodations for non-motorized travelers. The use of landscaped curb extensions/chokers that project into the street 4 ft to 6 ft at street corners to promote vehicle slowing and to shorten the street-crossing distance for pedestrians would enhance pedestrian safety.

As stated in Mitigation Measure 4.16.4, Rectangular Rapid Flashing Beacons (RRFBs) are required at the crosswalks at the uncontrolled intersection of “B” Street/“BB” Street and the uncontrolled intersection of “A” Street/“D” Street in order to enhance driver's awareness of crosswalks needed for efficient school access. The RRFBs can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. RRFB control at a crosswalk has the potential to be an effective traffic control device since it fulfills a need, commands attention, conveys a clear meaning, commands respect of road users, and gives adequate time for proper response.

On-street parking is allowed on neighborhood streets and segments of “BB” Street, “C” Street, and “B” Street. On-street parking, in effect, reduces the width of the street, leading to slower driving. Parking also separates traveling cars from the sidewalk, helping to improve pedestrian safety. With incorporation of Mitigation Measure 4.16.4, potential impacts related to pedestrian safety would be less than significant.

Threshold 4.16.4: Would the Project result in inadequate emergency access?

Potentially Significant Impact.

Construction. Development of the proposed Project would require excavation of the site; delivery of materials, equipment, and personnel; demolition of the 1,744 sf existing structure on the Project site; undergrounding of utilities; construction of the buildings; and installation of landscaping. The proposed Project would be implemented over an estimated period of 67 months (approximately 5.5 years). Demolition and site preparation would span approximately 3 months, and grading would span approximately 12 months. Paving and installation of infrastructure would take approximately 4 months and 12 months, respectively, and would occur concurrently. Building construction would be implemented over an estimated period of 46 months.

Construction activities would potentially affect emergency access by requiring partial lane closures during street improvements and utility installation or by increasing emergency vehicle response times. Mitigation Measure 4.16.1 requires that the Project Applicant/Developer prepare a CTMP to ensure that emergency vehicles would be able to navigate through streets adjacent to the Project site that may experience congestion due to construction activities. Mitigation Measure 4.16.1 also requires that all emergency access to the Project site and adjacent areas be kept clear and unobstructed during all phases of demolition and construction. Traffic management personnel (flag persons), required as part of the CTMP, would be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. If a partial street closure (i.e., a lane closure) would be required, notice would be provided to the Orange County Sheriff's Department, and flag persons would be used to facilitate the traffic flow until construction is complete. With implementation of Mitigation Measure 4.16.1, potential impacts related to emergency access during construction would be less than significant. No additional mitigation is required.

Operation. Three existing intersections (one traffic signal on Bake Parkway, one unsignalized intersection on Bake Parkway, and one traffic signal on Rancho Parkway) would provide access

to the project site. The TIA access analysis demonstrates that each of these intersections is anticipated to operate at satisfactory LOS. The Project would not impede existing routes for emergency vehicles, and emergency vehicles would have multiple routes to access the Project site. Further, as part of the Project approval process, emergency access to/from the site would be required to meet all applicable City codes and standards. The Orange County Fire Authority (OCFA) approved a conceptual Fire Master Plan (refer to Figure 4.19.1) in February 2018, a conceptual Fire Protection Plan with Ember Mitigation (refer to Figure 4.19.2) in January 2018, and a conceptual Fuel Modification Plan (refer to Figure 4.19.3) in March 2018. The Fire Master Plan and Fire Protection Plan address specific fire prevention and access elements required by the City of Lake Forest Municipal Code and the California Building Code (CBC). The Fire Master Plan establishes the proper location and adequacy of fire suppression facilities as well as fire access routes on the Project site. The Fire Master Plan also identifies the locations of fire hydrants, a water supply for firefighting, and emergency access to residences and structures on the Project site. According to OCFA, adherence to the elements of the Fire Master Plan is directly correlated with the effectiveness of first responders, including fire and emergency medical personnel. The *Nakase Property Area Plan* (Woodley Architectural Group 2019) meets or exceeds the requirements of OCFA to not hinder fire access and fire department and operations for the planned community. Thus, operational impacts related to emergency access would be considered less than significant, and no mitigation measures are required.

4.16.7 Cumulative Impacts

4.16.7.1 Interim Year (2020)

Interim Year (2020) volume forecasts were developed by the City's traffic model consultant using the LFTAM without the Project land uses (assuming existing commercial nursery operations) and with the proposed Project. LOS calculations were conducted for the study intersections to evaluate their operations with existing off-site roadway and intersection geometrics. Interim Year (2020) intersection analysis results are summarized in Table 4.16.H, which indicates that one study area intersection (Bake Parkway/Trabuco Road) is anticipated to operate at an unacceptable LOS during peak hours without the Project and in the Plus Project condition. The Project does not cause an increase in ICU of greater than 0.01. Therefore, the Project impact is less than significant, and no mitigation is required.

4.16.7.2 General Plan Buildout Year (2040)

The TIA evaluated the Project's potential cumulative impacts in the General Plan Buildout Year (2040) scenario. The Lake Forest General Plan designates the Nakase Property for approximately 1,841,700 sf of business park use. The proposed Project would generate 14,122 fewer trips per day with 1,377 fewer vehicles per hour during the a.m. peak hour and 1,442 fewer vehicles per hour during the p.m. peak hour in comparison to the adopted City of Lake Forest General Plan business park land use for the site.

Table 4.16.H: Interim Year (2020) Intersection Level of Service Summary

Intersection		Interim Year (2020) Without Project				Interim Year (2020) Plus Project				Change With Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	Lake Forest Drive/Dimension Drive	0.43	A	0.47	A	0.44	A	0.47	A	0.01	0.00
2	Lake Forest Drive/Rancho Parkway	0.50	A	0.59	A	0.63	B	0.73	C	0.13	0.14
3	Lake Forest Drive/SR-241 SB Off-Ramp	0.40	A	0.44	A	0.41	A	0.46	A	0.01	0.02
4	Lake Forest Drive/SR-241 NB On-Ramp	0.32	A	0.36	A	0.32	A	0.37	A	0.00	0.01
5	Corridor Center/Rancho Parkway	0.23	A	0.52	A	0.39	A	0.49	A	0.16	-0.03
6	Bake Parkway/Portola Parkway	0.48	A	0.70	B	0.47	A	0.68	B	-0.01	-0.02
7	Bake Parkway/Towne Center Drive	0.57	A	0.62	B	0.60	A	0.63	B	0.03	0.01
8	Bake Parkway/Rancho Parkway	0.62	B	0.67	B	0.58	A	0.67	B	-0.04	0.00
9	Bake Parkway/Rancho Parkway South	0.69	B	0.65	B	0.71	C	0.68	B	0.04	0.03
10	Bake Parkway/Orchard Road (unsignalized)	20.5 sec	C	14.3 sec	B	21.8 sec	C	22.8 sec	C	1.3 sec	8.5 sec
11	Dimension Drive/Bake Parkway	0.56	A	0.70	B	0.59	A	0.73	C	0.03	0.03
12	Alton Parkway/Rancho Parkway South	0.50	A	0.52	A	0.58	A	0.53	A	0.08	0.01
13	Alton Parkway/SR-241 Ramps	0.44	A	0.42	A	0.44	A	0.42	A	0.00	0.00
14	Alton Parkway/Towne Centre Drive	0.38	A	0.43	A	0.38	A	0.43	A	0.01	0.00
15	Alton Parkway/Portola Parkway	0.44	A	0.31	A	0.43	A	0.32	A	-0.01	0.01
16	Lake Forest Drive/Portola Parkway	0.55	A	0.71	C	0.55	A	0.73	C	0.00	0.02
17	Lake Forest Drive/Towne Centre Drive	0.39	A	0.51	A	0.40	A	0.52	A	0.01	0.01
18	Towne Centre Drive/Portola Parkway	0.62	B	0.64	B	0.61	B	0.64	B	-0.01	0.00
19	Glenn Ranch Road/Portola Parkway	0.59	A	0.60	A	0.59	A	0.59	A	0.00	-0.01
20	Portola Parkway/SR-241 Ramps	0.43	A	0.54	A	0.43	A	0.55	A	0.00	0.01
21	Portola Parkway/Rancho Parkway	0.45	A	0.48	A	0.45	A	0.48	A	0.00	0.00
22	El Toro Road/Portola Parkway	0.59	A	0.78	C	0.62	B	0.78	C	0.03	0.00
23	Los Alisos Boulevard/Santa Margarita Parkway	0.79	C	0.83	D	0.77	C	0.83	D	-0.02	0.00
24	Alton Parkway/Commercentre Drive	0.49	A	0.58	A	0.52	A	0.60	A	0.03	0.02
25	Alton Parkway/Irvine Boulevard	0.79	C	0.71	C	0.79	C	0.71	C	0.00	0.00
26	Bake Parkway/Commercentre Drive	0.61	B	0.74	C	0.64	B	0.75	C	0.03	0.01
27	Bake Parkway/Irvine Boulevard-Trabuco Road	1.02	F	0.93	E	1.03	F	0.92	E	0.01	-0.01
28	Bake Parkway/Toledo Way	0.76	C	0.65	B	0.76	C	0.66	B	0.00	0.01
29	Bake Parkway/Jeronimo Road	0.85	D	0.80	C	0.87	D	0.80	C	0.02	0.00
30	Bake Parkway/Muirlands Boulevard	0.62	B	0.70	B	0.62	B	0.70	B	0.00	0.01
31	Bake Parkway/Rockfield Boulevard	0.60	A	0.72	C	0.61	B	0.72	C	0.00	0.01
32	Bake Parkway/I-5 NB Ramps	0.88	D	0.63	B	0.88	D	0.64	B	0.01	0.02
33	Bake Parkway/I-5 SB Ramps	0.75	C	0.78	C	0.76	C	0.79	C	0.01	0.01
34	Lake Forest Drive/Trabuco Road	0.83	D	0.79	C	0.82	D	0.82	D	-0.01	0.03
35	Lake Forest Drive/Serrano Road	0.69	B	0.59	A	0.69	B	0.61	B	0.00	0.02
36	El Toro Road/Trabuco Road	0.70	C	0.76	C	0.69	B	0.75	C	-0.01	-0.01
37	El Toro Road/Serrano Road	0.54	A	0.63	B	0.54	A	0.62	B	0.00	-0.01
38	El Toro Road/Jeronimo Road	0.72	C	0.75	C	0.70	B	0.76	C	-0.02	-0.01

Source: Nakase Property Traffic Impact Analysis (Urban Crossroads 2019c).

Notes: ICU value is expressed in volume-to-capacity ratio.

Average delay is expressed in seconds of delay per peak-hour vehicle.

LOS shown in **Bold** indicates unacceptable LOS.

I-5 = Interstate 5

LOS = level of service

SB = southbound

ICU = Intersection Capacity Utilization

NB = northbound

SR-241 = State Route 241

The TIA evaluates the Project's potential impacts in multiple scenarios including with and without the western extension of Portola Parkway and with and without several specific LFTM improvements. In each of these scenarios, the Project was found to have less than significant impacts, which can be attributed to the lower trip generation compared to the General Plan land use designation. Therefore, the Project's contribution to cumulative traffic impacts would be less than significant and no mitigation is required.

4.16.8 Level of Significance Prior to Mitigation

Information related to *State CEQA Guidelines* Section 15064.3 subdivision (b) was provided for information purposes only because the City has not yet adopted VMT metrics or thresholds of significance related to VMT. The Project would have a potentially significant impact related to hazards due to geometric design features and emergency access; therefore, mitigation is required. Potential adverse impacts to program, plan, ordinance or policy addressing the circulation system may occur during construction and operation of the Project and mitigation is required. The Project's contribution to cumulative traffic impacts would be less than significant and no mitigation is required.

4.16.9 Regulatory Compliance Measures and Mitigation Measures

4.16.9.1 Regulatory Compliance Measures

There are no Regulatory Compliance Measures (RCMs) related to traffic that are applicable to the proposed Project.

4.16.9.2 Mitigation Measures

- Mitigation Measure 4.16.1:** **Construction Traffic Management Plan (CTMP).** Prior to the issuance of grading permits, the Project Applicant/Developer shall prepare a CTMP for approval by the City of Lake Forest Director of Public Works/City Engineer, or designee, and shall implement the Plan during Project construction with the goal of maintaining acceptable intersection levels of service (LOS) during peak traffic hours. At a minimum, the CTMP shall include, but not be limited to, the following:
- Provisions for temporary traffic control during all construction activities adjacent to public right-of-way to improve traffic flow on public roadways and ensure the safe access into and out of the site (e.g., warning signs, lights and devices, and flag person).
 - The delivery and removal of heavy equipment shall occur outside of the morning and evening peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday).

- Routine street closures shall be planned to occur outside the morning and evening peak traffic hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday).
- Soil import and export activity shall not be permitted during the morning and evening peak traffic hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday).
- Rerouting construction trucks to reduce travel on congested streets.
- Prohibiting construction-related vehicles from parking on public streets.
- Providing safety precautions for pedestrians and bicyclists through such measures as alternate routing and protection barriers.
- Scheduling construction-related deliveries, other than concrete and earthwork-related deliveries, so as to reduce travel during peak travel periods.
- Obtaining the required permits for truck haul routes from the City of Lake Forest and/or the California Department of Transportation (Caltrans).
- All emergency access to the Project site and adjacent areas shall be kept clear and unobstructed during all phases of demolition and construction.
- The Orange County Sheriff's Department and the Orange County Fire Authority (OCFA) shall be notified a minimum of 1 week (7 days) in advance of any lane closures or roadway work so that emergency vehicles can be rerouted during construction if deemed necessary in the expert opinion of the Orange County Sheriff's Department and/or OCFA.
- The Orange County Transportation Authority (OCTA) shall be notified regarding any affected locations a minimum of 10 working days prior to construction so that transit service can be rerouted if deemed necessary in the expert opinion of the OCTA.
- Flag persons shall be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access.

Mitigation Measure 4.16.2 **Bake Parkway/Jeronimo Road.** Unless physical improvements are already constructed, prior to ~~issuance of the first final building inspection certificate of occupancy~~, the City of Lake Forest Project Applicant/Developer shall construct a second northbound left-turn lane at the intersection of Bake Parkway/Jeronimo Road consistent with the design requirements of the City of Lake Forest.

Mitigation Measure 4.16.3 **Sight Distance Analysis.** Prior to issuance of precise grading permits and building permits, the Project Applicant/Developer shall prepare a detailed sight distance analysis for all Project intersections. The sight distance analysis shall be prepared according to the City of Lake Forest Municipal Code and the Caltrans *Highway Design Manual* (HCM) standards and guidelines, and indicate limited use areas (e.g., low-height landscaping), and on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right-in/right-out). Intersections on Bake Parkway, which has a 50-mile-per-hour (mph) posted speed limit, should be provided with a minimum of 430 feet (ft) of stopping sight distance according to the Caltrans *Highway Design Manual*. Intersections internal to the project site would have a 25 mph speed limit and would require a minimum of 150 ft of stopping sight distance according to the Caltrans *Highway Design Manual*. The findings of the sight distance analysis shall be included in a report(s) subject to review and approval by the Directors of Planning and Building and Public Works, or designees.

Mitigation Measure 4.16.4: **Rectangular Rapid Flashing Beacons (RRFBs).** Prior to ~~issuance of the first final building inspection certificate of occupancy~~, RRFBs shall be installed at the crosswalks at the uncontrolled intersection of "B" Street/"BB" Street and the uncontrolled intersection of "A" Street/"D" Street.

4.16.10 Level of Significance after Mitigation

Potential impacts to transportation/traffic associated with Project construction and operation would be reduced to levels that are less than significant with implementation of the mitigation measures listed above.

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4.17 TRIBAL CULTURAL RESOURCES

This section provides a discussion of the existing tribal cultural resource environment and an analysis of potential impacts to tribal cultural resources from implementation of the proposed Nakase Nursery/Toll Brothers Project (proposed Project). According to California Public Resources Code (PRC) Section 21080.3.1 and Chapter 532, Statutes 2014 (i.e., Assembly Bill [AB] 52), “tribal cultural resources” are defined as the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources; or (B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1
2. 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 Section 5024.1

This section summarizes information obtained from Senate Bill [SB] 18 and AB 52 Native American consultation efforts. The record of these consultation efforts is contained in Appendix O of this Environmental Impact Report (EIR).

4.17.1 Scoping Process

The City of Lake Forest (City) received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. One comment letter included comments related to cultural resources and tribal cultural resources.

The letter from the Native American Heritage Commission (NAHC) (August 8, 2018) outlines the City’s tribal consultation requirements under AB 52 and SB 18. The NAHC recommended the City consult with Native American Tribes and analyze impacts and include mitigation for tribal cultural resources in the EIR.

4.17.2 Existing Environmental Setting

The area that is now Lake Forest was prehistorically occupied by Native Americans. This area is primarily within traditional boundaries of the Gabrielino but is also along the boundary of the territory of the Juaneño. Aliso Creek—located approximately 0.65 mile (mi) southeast of the Project site—is generally accepted as the boundary of the territory between the two groups, with Gabrielino territory to the northeast and Juaneño territory to the southwest (Kroeber 1925). However, because the proposed Project is located close to the current alignment of Aliso Creek, it is in an area of potential overlap between the two tribal territories.

4.17.3 Regulatory Setting

4.17.3.1 Federal Regulations

There are no federal regulations that are applicable to tribal cultural resources relevant to the proposed Project.

4.17.3.2 State Regulations

Senate Bill 18 Tribal Consultation. California Government Code Section 65352.3 (adopted pursuant to the requirements of SB 18) requires local governments to contact, refer plans to, and consult with tribal organizations prior to making a decision to adopt or amend a General or Specific Plan. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction and are identified, upon request, by the NAHC. As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

Assembly Bill 52 Tribal Consultation. California PRC Section 21080.3.1 and Chapter 532, Statutes 2014 (i.e., AB 52), require that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. The bill requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. The bill specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have an NOP or a notice of negative declaration or Mitigated Negative Declaration filed on or after July 1, 2015. By requiring the lead agency to consider these effects relative to tribal cultural resources and to conduct consultation with California Native American tribes, this bill imposes a State-mandated local program.

4.17.3.3 Regional Regulations

There are no regional regulations that are applicable to tribal cultural resources relevant to the proposed Project.

4.17.3.4 Local Regulations

There are no local regulations that are applicable to tribal cultural resources relevant to the proposed Project.

4.17.4 Methodology

4.17.4.1 Senate Bill 18

The NAHC was contacted on February 8, 2018, to conduct a Sacred Lands File (SLF) search and provide a Native American Contact List for the Project site. The NAHC responded on February 9, 2018, stating that an SLF search was completed for the Project site with negative results. The NAHC also recommended that 20 Native American individuals representing the Kumeyaay, Gabrielino, Juaneño, Luiseño, and Kitanemuk Serrano Tataviam groups be contacted for information regarding cultural resources that could be affected by the proposed Project. These 20 individuals were contacted via a letter sent on April 19, 2018, and contacted again on May 15, 2018, via email or phone as a follow-up. With the exception of Andrew Salas, Gabrieleno Band of Mission Indians—

Kizh Nation, no responses were received. Mr. Salas's group had already reached out directly to the City of Lake Forest to participate in consultation per AB 52 (discussed below).

4.17.4.2 Assembly Bill 52

The NAHC was contacted on February 8, 2018, to conduct an SLF search and provide a Native American Contact List for the Project site. The NAHC responded on February 9, 2018, stating that an SLF search was completed for the Project site with negative results. The NAHC also recommended that 20 Native American individuals representing the Kumeyaay, Gabrielino, Juaneño, Luiseño, and Kitanemuk Serrano Tataviam groups be contacted for information regarding cultural resources that could be affected by the proposed Project. These 20 individuals were contacted by the City of Lake Forest via a letter sent on April 24, 2018. On May 4, 2018, Mr. Salas contacted the City of Lake Forest directly via email, stating that the Project site is located within the tribal territory of the Gabrieleno Band of Mission Indians—Kizh Nation and that they would like to consult with the agency. A consultation phone call was held on July 19, 2018, with a follow-up memorandum prepared on July 25, 2018. As a result of this consultation phone call, Mr. Salas's group sent a document on August 28, 2018, containing recommended mitigation measures for tribal cultural resources for the proposed Project. As discussed below, the recommendations have been incorporated into this document.

4.17.5 Thresholds of Significance

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

- Threshold 4.16.1:** Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is 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 4.16.2:** Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

None of the thresholds for tribal cultural resources were scoped out in the Initial Study, which is included in Appendix A. Therefore, all of the thresholds listed above are addressed in the following analysis.

4.17.6 Project Impacts

Threshold 4.16.1: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

No Impact. A cultural resources records search was completed on February 28, 2018, at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) at California State University, Fullerton. It included a review of all prehistoric and historic archaeological sites within a 0.5 mi radius of the proposed Project, as well as a review of known cultural resource survey and excavation reports in that area. The California State Historic Resources Inventory (HRI), National Register of Historic Places (National Register), California Historical Landmarks (SHL), California Points of Historical Interest (SPHI), and various local historical registers were examined. In addition, a Historical Resources Evaluation Report (HRER) was prepared to assess the eligibility of buildings currently occupying the Project site for the National Register and the California Register of Historical Resources (California Register). The SCCIC records search results identified no previously recorded cultural resources in the Project site, and the HRER concluded that the current property on the Project site is not a historical resource. As such, there are no historical resources as defined in Section 15064.5 of the *State CEQA Guidelines* or PRC 5020.1(k) on the Project site.

Native American consultation was conducted in compliance with SB 18 and AB 52. During the consultation process, the Gabrieleno Band of Mission Indians – Kizh Nation stated that the Project site is located within their tribal territory and requested consultation with the Lead Agency. During a July 19, 2018, phone consultation meeting with the City, Mr. Salas stated that the Project site is adjacent to historic waterways and, as such, the tribe has concerns about the project unearthing buried cultural resources, including burials and/or cremations. No information regarding specific known tribal cultural resources on the Project site was provided by the tribe.

Therefore, no tribal cultural resources listed or eligible for listing in the California Register or in a local register exist within the Project area, and there are no known tribal cultural resources on the Project site. The proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource defined as a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register of

or in a local register of historical resources as defined in PRC Section 5020.1(k), and no mitigation is required.

Threshold 4.16.2: **Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Potentially Significant Impact. Native American consultation was conducted in compliance with SB 18 and AB 52. During the consultation process, the Gabrieleno Band of Mission Indians – Kizh Nation stated that the Project site is located within their tribal territory. During a July 19, 2018, phone consultation meeting with the City, Mr. Salas of the Gabrieleno Band of Mission Indians – Kizh Nation stated that the Project site is adjacent to historic waterways, and, as such, the Tribe has concerns about the project unearthing unknown buried cultural resources, including burials and/or cremations. The Tribe requested Native American monitoring during ground-disturbing activities and provided recommended mitigation measures to the City via email on August 28, 2018. The Tribe's recommendations have been incorporated into mitigation measures for the proposed Project.

Mitigation Measure 4.5.1 requires the retention of a qualified Native American Monitor (Monitor) and requires the presence of the approved Monitor during all grading activities. Mitigation Measure 4.5.1 further requires that all archaeological and tribal cultural resources encountered during construction activities be evaluated by the Monitor. In the event that previously unidentified tribal cultural resources are discovered, all material collected during the grading monitoring program shall be processed and curated at a facility that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79.

Mitigation Measure 4.5.1 also requires diversion of construction work in the event any human skeletal material or related funerary objects are encountered during ground disturbance and notification of the County Coroner. If the remains are determined to be Native American, the County Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). Mitigation Measure 4.5.1 details steps for the treatment of previously unknown Native American burials. Implementation of Mitigation Measures 4.5.1 would reduce potential impacts related to unknown buried tribal cultural resources to a less than significant level.

4.17.7 Cumulative Impacts

Potential impacts of the proposed Project to unknown tribal cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the overall loss of tribal cultural

resources in the region. However, each development proposal received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts to tribal cultural resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures that would reduce or avoid significant impacts.

4.17.8 Level of Significance Prior to Mitigation

No impacts to known tribal cultural resources listed or eligible for listing in the California Register or in a local register would occur. Prior to mitigation, the proposed Project has the potential to result in significant impacts to previously undiscovered tribal cultural resources.

4.17.9 Regulatory Compliance Measures and Mitigation Measures

4.17.9.1 Regulatory Compliance Measures

There are no regulatory compliance measures applicable to tribal cultural resources.

4.17.9.2 Mitigation Measures

For clarity, Mitigation Measure 4.5.1 is provided below.

Mitigation Measure 4.5.1

Archaeological Resources, Tribal Cultural Resources, and Human Remains. Prior to issuance of a grading permit for any site within the Project area, a qualified archaeologist shall be retained by the Applicant for that grading permit to provide professional archaeological services. The archaeologist shall be present at the pre-grading conference to establish procedures for archaeological resource surveillance. Those procedures shall include provisions for temporarily halting or redirecting work to permit sampling, identification, and evaluation of resources deemed by the archaeologist to potentially be historical resources or unique archaeological resources under the California Environmental Quality Act (CEQA). The archaeologist also shall conduct on-site archaeological monitoring for the grading operation. Should historical resources or unique archaeological resources be discovered during the grading operation, grading activities shall be modified to allow expeditious and proper analysis and/or salvage of the resources. Disposition of the resources shall be within the discretion of the City of Lake Forest.

Prior to Approval of Grading or Improvement plans, the Applicant shall implement a grading monitoring plan to mitigate potential impacts to undiscovered buried archaeological resources and tribal cultural resources on the Nakase Nursery/Toll Brothers Project to the satisfaction of the City of Lake Forest. This program shall include, but shall not be limited to, the following actions:

1. Provide evidence to the Lead Agency that a qualified archaeologist and Native American monitor have been contracted to implement a grading monitoring program to the satisfaction of the City of Lake Forest. A letter from the Project Archaeologist shall be submitted to the City of Lake Forest Director of Community Development. A letter from the Native American Monitor shall also be submitted to the City of Lake Forest Director of Community Development. The letter shall include the following guidelines:
 - a. The qualified archaeologist/historian and Native American monitor shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program.
 - b. The consulting archaeologist and Native American monitor shall monitor all areas identified for development.
 - c. An adequate number of monitors (archaeological/historical/Native American) shall be present to ensure that all earth-moving activities are observed and shall be on site during all grading activities.
 - d. During the original cutting (used in this mitigation to refer to the “cut” part of “cut and fill”) of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site full time. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator.
 - e. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site as determined by the Principal Investigator of the excavations. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator in consultation with the Native American monitor.
 - f. Isolates and clearly non-significant deposits shall be minimally documented in the field, and the monitored grading can then proceed.

-
- g. In the event that previously unidentified, potentially significant cultural resources (including tribal cultural resources) are discovered, the archaeologist, in consultation with the Native American monitor(s), shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation. The archaeologist shall contact the City of Lake Forest Director of Community Development at the time of discovery. After consultation with the property owner, archaeologist, and Native American monitor(s), disposition of the resources shall be within the discretion of the City of Lake Forest. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the archaeologist, in consultation with the Native American monitor(s), then carried out using professional archaeological and culturally sensitive methods.
 - h. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.
 - i. Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods. The Principal Investigator shall determine the amount of material to be recovered for an adequate artifact sample for analysis.
 - j. In the event that previously unidentified non-tribal cultural resources are discovered, those resources shall be processed and curated at a facility that meets federal standards per 36 CFR Part 79, and therefore shall be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to the John D. Cooper Archaeological and Paleontological Curation Center, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that

the materials have been received and that all fees have been paid.

- k. In the event that previously unidentified cultural resources are discovered, a report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the City of Lake Forest prior to the issuance of any building permits. The report shall include California Department of Parks and Recreation Primary and Archaeological Site Forms.
 - l. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the City of Lake Forest by the consulting archaeologist that the grading monitoring activities have been completed.
2. Provide evidence to the City of Lake Forest that the following notes have been placed on the Grading Plan:
- a. The qualified archaeologist/historian and Native American monitor shall attend the pre-construction meeting with the contractors to explain and coordinate the requirements of the monitoring program.
 - b. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site to perform full-time monitoring as determined by the Principal Investigator of the excavations. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.
 - c. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site as determined by the Principal Investigator of the excavations. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Principal Investigator in consultation with the Native American monitor.
 - d. In the event that previously unidentified, potentially significant cultural resources (including tribal cultural

resources) are discovered, the archaeologist, in consultation with the Native American monitor(s), shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation. The archaeologist shall contact the City of Lake Forest Director of Community Development at the time of discovery. After consultation with the property owner, archaeologist, and Native American monitor(s), disposition of the resources shall be within the discretion of the City of Lake Forest. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the archaeologist, in consultation with the Native American monitor(s), then carried out using professional archaeological and culturally sensitive methods.

- e. The consulting archaeologist shall monitor all areas identified for development.
- f. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.
- g. Prior to rough grading inspection sign-off, provide evidence that the field grading monitoring activities have been completed to the satisfaction of the City of Lake Forest. Evidence shall be in the form of a letter from the Project Archaeologist.
- h. Prior to final grading release, submit to the satisfaction of the City of Lake Forest a final report that documents the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program. The report shall also include the following:
 - 1) California Department of Parks and Recreation Primary and Archaeological Site Forms.
 - 2) Evidence that all non-tribal cultural materials collected during the grading monitoring program have been curated, and therefore shall be professionally curated

and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to the John D. Cooper Archaeological and Paleontological Curation Center, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that the materials have been received and that all fees have been paid.

3. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the City of Lake Forest by the consulting archaeologist that the grading monitoring activities have been completed.
4. The qualified archaeologist retained shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest.
5. Artifacts recovered shall be prepared, identified, and cataloged before donation to the Gabrieleno Band of Mission Indians – Kizh Nation. If the Tribe does not want custody, an accredited repository designated by the City of Lake Forest shall be utilized. Any artifacts determined to be insignificant shall be offered to local schools for use in educational programs.
6. The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The report shall include a list of specimens recovered, documentation of each locality, and interpretation of artifacts recovered, and shall include all specialists' reports as appendices.

4.17.10 Level of Significance after Mitigation

No impacts to known tribal cultural resources listed or eligible for listing in the California Register or in a local register would occur. Mitigation Measure 4.5.1 would reduce potential impacts to newly discovered tribal cultural resources to a less than significant level.

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4.18 UTILITIES AND SERVICE SYSTEMS

This section describes the utility providers within whose jurisdiction the proposed Nakase Nursery/Toll Brothers Project (proposed Project) site is located and evaluates the potential impacts of the proposed Project on utilities and service systems. This section is based on multiple data sources, including written correspondence and coordination with the utility providers (Appendix K); Section 4.6, Energy; Section 4.10, Hydrology and Water Quality; utility provider websites; and adopted planning documents of utility providers and the City of Lake Forest (City) General Plan Update Existing Conditions Report (City of Lake Forest 2018c). This section addresses the following utilities (service providers are noted in parentheses):

- Electricity (Southern California Edison [SCE])
- Natural Gas (Southern California Gas Company [SoCalGas])
- Solid Waste (Frank R. Bowerman Landfill; Orange County Waste & Recycling [OCWR])
- Wastewater and Potable Domestic Water (Irvine Ranch Water District [IRWD])
- Storm Drainage (Orange County Flood Control District [OCFCD])/City of Lake Forest

4.18.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Three comment letters included comments related to Utilities and Service Systems.

The letter from SCE (August 14, 2018) expressed concern about encroachment onto SCE right-of-way and potential landscaping conflicts with SCE lines, and requested a set of plans from the Applicant. SCE also requested that the Applicant enter into a Method of Service Agreement with SCE and fund an electric service study. The letter from Judy Esposito (August 6, 2018) expressed concern about sewer capacity. The letter from the IRWD (August 3, 2018) indicated that the Applicant would be required to identify the proposed Project's potential impacts to IRWD's potable and recycled water and sewer systems in a technical memorandum or an addendum to the 2010 Lake Forest Sub-Area Master Plan (SAMP).

4.18.2 Existing Environmental Setting

4.18.2.1 Wastewater

The IRWD owns and operates the City's sewer system. The IRWD provides sewer treatment to more than 390,000 residential customers per year in the cities of Irvine, Tustin, Lake Forest, Newport Beach, Orange, and Costa Mesa in addition to unincorporated areas of Orange County. Wastewater is removed via the sanitary sewer system, which consists of approximately 1,100 miles (mi) of sewer lines ranging in size from 4 inches to 60 inches in diameter, 102,000 sewer connections, and 12 mi of force mains across IRWD's 181-square-mile (sq mi) service area (IRWD 2018a).

The IRWD is a multiservice agency responsible for providing domestic water service, sewage collection and treatment, water recycling, and urban runoff natural treatment in Central Orange County, California. Collected wastewater for the Project site is pumped to one of two treatment

plants owned and operated by the IRWD: the Michelson Water Recycling Plant (MWRP) or the Los Alisos Water Recycling Plant. The IRWD operates ~~four~~ two treatment plants and two ocean outfalls, in addition to multiple programs to meet the needs of its member agencies and the requirements of the Clean Water Act (CWA) and applicable National Pollutant Discharge Elimination System (NPDES) permits.

The MWRP is located approximately 9.4 mi southwest of the Project site and provides treatment of wastewater generated by the Project site. The MWRP Phase 2 expansion project, which was completed in March 2009, increased the capacity of the MWRP from approximately 18 million gallons per day (mgd) to 28 mgd (MWRP 2019). About 20 percent of the IRWD's current water supply is recycled water, enough to provide landscape irrigation for 80 percent of the IRWD's business and community customers including parks, school grounds, and golf courses. The MWRP Phase 2 Expansion allows the IRWD to continue providing water to meet the community's needs while decreasing the IRWD's dependence on imported potable water. Based on flow-monitoring information, approximately 20.3 mgd are currently being conveyed to the MWRP for treatment (IRWD 2018b). Therefore, the MWRP is currently operating at approximately 72.5 percent of its daily design capacity.

The existing nursery uses on the Project site generate a negligible amount of wastewater. Written correspondence dated November 19, 2018, from the IRWD indicated that the IRWD will be able to adequately serve the proposed Project, and the IRWD's SAMP addendum will analyze the need for any improvements (if necessary) to accommodate additional sewer loads from the proposed Project.

4.18.2.2 Water Supply

The Project site is also within the IRWD's domestic water service area. The IRWD's drinking water is a blend of groundwater from the Orange County Groundwater Basin and surface water imported by the Metropolitan Water District of ~~Orange County~~ Southern California (MWD~~OC~~). The IRWD's service area covers approximately 84,000 acres (ac) within central Orange County. The IRWD provides water service to more than 390,000 residential customers per year in the cities of Irvine, Tustin, Lake Forest, Newport Beach, Orange, and Costa Mesa in addition to unincorporated areas of Orange County. The IRWD delivers 90,403 acre-feet (af) of potable water to residential and commercial uses annually through 111,511 connections.

The IRWD is a special district, operating under State law, separately from the County of Orange (County) government. The IRWD published the 2015 Urban Water Management Plan (UWMP), which outlines how the IRWD will provide customers with a reliable supply of drinking water over the 5-year period from 2015 to 2020. The State requires the IRWD to update its UWMP every 5 years. The UWMP provides the California Department of Water Resources with information on the present and future water resources and demands and provides an assessment of the IRWD's water resource needs.

As described above, the IRWD relies on a combination of purchased or imported water, groundwater, and recycled water to meet its water needs. As described in its 2015 UWMP, the IRWD's total water supply was 95,220 acre feet per year (afy) in 2015. This consists of 18,696 afy of

imported or purchased water wholesaled by the ~~Metropolitan Water District (MWD)~~ through the Municipal Water District of Orange County (MWDOC), 2,826 afy of surface water, 50,833 afy of groundwater, and 22,866 afy of recycled water.¹ Groundwater makes up the largest portion of the IRWD's total water supply, at approximately 53 percent.

Although the IRWD currently provides water to the nursery uses on the Project site, the primary source of water on the Project site comes from an irrigation well located near the center of the Project site, which produces 300 gallons per minute (gpm).²

4.18.2.3 Existing Water Demand

The IRWD serves the Project site with domestic and recycled water facilities. IRWD maintains a 24-inch domestic water main and a 12-inch recycled water main located within Bake Parkway, which services the Project site and surrounding uses. Domestic water from the Bake Parkway water main is conveyed across the southern boundary of the Project site via an additional, on-site, 18-inch water line. The domestic water main extends further to the east to serve an existing commercial center adjacent to Lake Forest Drive. Although the nursery's existing water demand is supplied mainly by the existing irrigation well located on site, correspondence with the property owner on December 27, 2018, indicated that the IRWD provided a backup and supplemental water supply during hot weather.³ The IRWD provided an annual total water usage to the Project site of 3,341,316 gallons (gal) of water in 2018 and 5,515,752 gal of water in 2017.⁴

The total water demand as of 2015 in the IRWD service area was 90,430 afy, consisting of 64,154 afy of potable and raw water and 26,249 afy of recycled water demand. The total water demand in the IRWD service area is projected to increase to 96,445 afy in 2020, 105,961 afy in 2025, 109,431 afy in 2030, and 111,277 afy in 2035 during normal years. Each of these total-water-demand projections is expected to increase by 7 percent during a worst-case multiple-dry-years scenario.

4.18.2.4 Fire Flow

The Orange County Fire Authority (OCFA) is responsible for fire suppression within the City. The OCFA relies on the area's infrastructure, including the adequacy of nearby water supplies to suppress fire. Thus, the City has adopted the 2016 California Fire Code (CFC) (Section 8.24.010 of the City of Lake Forest's Municipal Code) with amendments (Section 8.24.030 of the City of Lake Forest's Municipal Code) that lists the minimum required fire flow and flow durations. Fire flow is the flow rate of water supply (measured in gpm) available for firefighting measured at 20 pounds per square inch (psi) pressure. Available fire flow is the total water flow available at the fire hydrants, also measured in gpm.

¹ *2015 Urban Water Management Plan*. (Irvine Ranch Water District 2016). Website: https://www.irwd.com/images/pdf/doing-business/environmental-documents/UWMP/IRWD_UWMP_2015_rev_01-03-17_FINAL.pdf (accessed June 29, 2019).

² Feingold, Ilan (Toll Brothers). December 27, 2018. Email message to Marie Luna et al. re Nakase water supply questions.

³ Ibid.

⁴ Ibid.

4.18.2.5 Water Supply and Demand Projections

The supply and demand forecasts for the third-dry-year scenario (considered to be the worst-case scenario) included in the IRWD’s 2015 UWMP are shown in Table 4.18.A. As shown in Table 4.18.A, in the multiple-dry-year scenario, the IRWD’s projected water demand in 2025 would be 113,378 afy, and the IRWD’s projected water supply in 2025 would be 154,549 afy. This would result in a projected surplus of 41,171 afy of water.

**Table 4.18.A: Water Supply and Demand Projections Comparison
Third-Dry-Year Supply (2020–2035)**

Year	Water Supply (afy ¹)	Water Demand (afy)	Surplus (afy)
2020	142,197	103,195	39,002
2025	154,549	113,378	41,171
2030	154,549	117,091	37,458
2035	154,549	119,066	35,483

Source: Table 7-4, 2015 Urban Water Management Plan (IRWD 2016).

¹ An acre-foot is the amount of water necessary to cover 1 acre of surface area to a depth of 1 foot and is approximately 326,000 gallons of water.

afy = acre-feet per year

4.18.2.6 Storm Drains

The City owns and operates the storm water control systems in Lake Forest. Until recently, the OCFCD owned and operated the storm water control system within Lake Forest. The City took over control of all facilities recently and is currently in the process of tracking, mapping, and analyzing the facilities.¹ At this time, the City does not have its own mapping of the storm water facilities.

In the existing condition, 12.1 ac of the Project site is impervious area, which comprises approximately 9.9 percent of the 122 ac Project site. As discussed in Section 4.10, Hydrology and Water Quality, in the existing condition, onsite drainage is divided into two drainages. Drainage Area A consists of the western/northwestern portion of the Project site (approximately 76.6 ac). Storm water runoff within Drainage Area A drains southwesterly via sheet flow. Flow then channelizes in an onsite natural and partly paved drainage system that connects to an existing 10.5' x 10.5' reinforced concrete box (RCB) and the existing storm drain system (OCFCD Facility No. F19-P07), located along the southwest Project site boundary. This existing storm drain system discharges into Serrano Creek approximately 0.6 mi to the southwest of the Project site. Run-on to Drainage Area A consists of runoff from off-site areas to the north of the Project site (approximately 227.9 ac) that discharge into the Project site via an existing 84-inch reinforced concrete pipe (RCP) at Rancho Parkway and Corridor Center. The total tributary area (on site and off site) to the OCFCD Facility No. F19-P07 connection is 304.45 ac. The existing 100-year historic flow to the existing 10.5' x 10.5' RCB is 671 cubic feet per second (cfs).

¹ City of Lake Forest General Plan Update: Existing Conditions Report. (City of Lake Forest 2018c). Website: https://static1.squarespace.com/static/5abd4a977e3c3a6cd57d9c48/t/5be097d8c2241bf46b6623ba/1541445626140/LakeForestECR_Complete_110118_WebVersion.pdf (accessed Aug. 14, 2019).

Drainage Area B consists of the eastern/southeastern portion of the Project site (approximately 43.4 ac). Storm water runoff within Drainage Area B drains southeasterly via sheet flow. Flow then channelizes in an on-site natural and partly paved drainage prior to discharging to Serrano Creek via OCFCD Facility No. F19, which is located along the southern corner of the Project site. There is no offsite run-on to Drainage Area B. The existing 100-year historic flow to Serrano Creek is 84 cfs.

4.18.2.7 Solid Waste

The Project site is located within OCWR's service area. OCWR owns and operates three active landfills and four household hazardous-waste collection centers, and monitors 12 closed landfills. All three landfills are permitted as Class III landfills, which accept all types of nonhazardous municipal solid waste for disposal; however, no hazardous or liquid waste can be accepted.

The Frank R. Bowerman Landfill is the closest OCWR landfill to the Project site, approximately 3 mi northwest of the Project site, and would be expected to provide solid waste disposal for the construction and operation of the proposed Project. Solid waste considered unacceptable waste at the Frank R. Bowerman Landfill includes asbestos, batteries, brake linings, chemicals, fuel tanks, mufflers, paints, poisons, hazardous waste, animal parts, body parts, medical wastes, radioactive materials, auto body shredder wastes, fuels, heavy metals, explosives, pesticides, contaminated soil, liquid waste (moisture content greater than 50 percent), and nuisance dust. One of the four household waste collection centers provided by OCWR is located at 6411 Oak Canyon in Irvine, approximately 5 mi west of the Project site.¹ Waste considered unacceptable at the Frank R. Bowerman Landfill would be hauled to the household waste collection center.

The Frank R. Bowerman Landfill, which is permitted to receive a daily maximum of 11,500 tons per day (tpd), receives an average of approximately 8,500 tpd.² The Frank R. Bowerman Landfill is currently receiving approximately 73.9 percent of its permitted daily capacity. The Frank R. Bowerman Landfill is approximately 725 ac, with 534 ac permitted for refuse disposal. The landfill opened in 1990 and is scheduled to close in approximately 2053.

The Frank R. Bowerman Landfill is subject to regular inspections from the California Department of Resources Recycling and Recovery (CalRecycle) and its Local Enforcement Agency (LEA), the California Regional Water Quality Control Board (RWQCB), and the South Coast Air Quality Management District (SCAQMD) to ensure compliance with applicable regulations.

Assembly Bill (AB) 939 was enacted in 1989. This bill mandated a 25 percent reduction of waste being disposed of in the landfill system by 1995, and a 50 percent reduction by 2000. In response to AB 939, the California Integrated Waste Management Board (now known as CalRecycle) was established to monitor compliance with waste reduction requirements. According to CalRecycle, all counties within the State are required to have an approved Countywide Integrated Waste Management Plan (CIWMP), which outlines methods for waste diversion and demonstrates

¹ Household Hazardous Waste. (OC Waste & Recycling 2018b). Website: <http://www.oilandfills.com/hazardous> (accessed July 7, 2019).

² Frank R. Bowerman Landfill. (OC Waste & Recycling 2018a). Website: <http://www.oilandfills.com/civicax/filebank/blobdload.aspx?BlobID=83644> (accessed July 7, 2019).

sufficient solid-waste disposal capacity for a minimum of 15 years. In compliance with AB 939, the County prepared a CIWMP, which is kept current, demonstrating the required 15-year disposal capacity and allowing disposal of a maximum daily imported waste stream of 1,000 tpd. Imported tonnage varies depending on demand and is limited by the solid waste facility permit for each site.

Solid waste generated by the existing uses on the Project site mainly consist of compostable organic plant matter that may be reused on site.

4.18.2.8 Natural Gas

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply (CEC 2019d).

SoCalGas is the natural gas service provider for the Project site. SoCal Gas provides natural gas to approximately 21.8 million people in a 24,000 sq mi service area throughout Central and Southern California, from Visalia to the Mexican border.¹ SoCalGas owns and operates four natural gas storage facilities within southern California: Aliso Canyon, Honor Rancho, La Goleta, and Playa Del Rey.² According to the California Energy Commission (CEC), total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms (2,147.4 million therms for the residential sector).³ Total natural gas consumption in Orange County in 2018 was 575.1 million therms (339.0 million therms for the residential sector).⁴

According to the California Emissions Estimator Model (CalEEMod) modeling results in the *Nakase Property Greenhouse Gas Analysis* (Urban Crossroads 2019b), the estimated natural gas use for the existing nursery operations on the Project site is 177,650 thousand British thermal units per year (kBtu/yr) (1,776.5 therms).

4.18.2.9 Electricity

In 2017, California's electricity was generated primarily by natural gas (33.67 percent), coal (4.13 percent), large hydroelectric (14.72 percent), nuclear (9.08 percent), and renewable sources (29 percent). Total electric generation in California in 2017 was 292,039 gigawatt-hours (GWh), up 0.5 percent from the 2016 total generation of 290,567 GWh. In 2017, California produced approximately 70.7 percent and imported 29.3 percent of the electricity it used (CEC 2019c).

The Project site is within the service territory of SCE, which provides services through a grid of transmission lines and related facilities. SCE provides electricity to more than 15 million people in a

¹ About SoCalGas (SoCalGas2019). Website: <https://www3.socalgas.com/about-us/company-profile> (accessed June 29, 2019).

² 2018 California Gas Report (California Gas and Electric Utilities 2018). Website: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf (accessed June 29, 2019).

³ Gas Consumption by Entity for 2018 (California Energy Commission 2019f). Website: <http://www.ecdms.energy.ca.gov/gasbyutil.aspx> (accessed July 7, 2019).

⁴ Ibid.

50,000 sq mi area of Central, Coastal, and Southern California.¹ According to the CEC, total electricity consumption in the SCE service area in 2018 was 83,400 GWh (28,617 GWh for the residential sector). Total electricity consumption in Orange County in 2018 was 19,858 GWh (6,814 GWh for the residential sector) (CEC 2019a).

Based on the CalEEMod modeling output in the *Greenhouse Gas Analysis*, the existing nursery operations generate an electricity usage on the Project site of 71,825 kilowatt hours per year (kWh/yr) for the existing nursery operations.

4.18.2.10 Telecommunications Facilities

Telephone, television, and internet services are offered by a variety of providers in Lake Forest, including AT&T, Cox Communications, Frontier Communications, HughesNet, Lake Forest DirectTV, and Planet Dish. Cox Communications is currently the only non-satellite TV service provider in Lake Forest. Satellite internet providers include ViaSat Satellite. These services are privately operated and offered to each location in Lake Forest for a fee defined by the provider.

4.18.3 Regulatory Setting

4.18.3.1 Federal Regulations

No federal regulations for utilities and service systems apply to the proposed Project.

4.18.3.2 State Regulations

California Integrated Waste Management Act of 1989. The California Integrated Waste Management Act of 1989 (Public Resource Code [PRC] Division 30), enacted through AB 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000 (PRC Section 41780). The State determines compliance with this mandate to “divert” 50 percent of generated waste (which includes both disposed and diverted waste) through a complex formula. This formula requires cities and counties to conduct empirical studies to establish a “base year” waste generation rate against which future diversion is measured. The actual determination of the diversion rate in subsequent years is arrived at through deduction, not direct measurement: instead of counting the amount of material recycled and composted, the city or county tracks the amount of material disposed at landfills, then subtracts the disposed amount from the base year amount. The difference is assumed to be diverted (PRC 41780.2).

Water Supply Assessment. PRC Section 21151.9 requires that any proposed “project,” as defined in Section 10912 of the Water Code, prepare a Water Supply Assessment (WSA) in compliance with Water Code Section 10910 et seq. Water Code Section 10910 et seq. outlines the necessary information and analysis that must be included in an EIR to ensure that a proposed land development has a sufficient water supply to meet existing and planned water demand over a 20-year horizon.

¹ Southern California Edison’s Service Area (SCE 2019). Website: https://newsroom.edison.com/internal_redirect/cms.ipressroom.com.s3.amazonaws.com/166/files/20193/SCE%20Service%20Area%20Fact%20Sheet_Ver2_04252019.pdf (accessed June 20, 2019).

According to WSA requirements, a “project” is defined as any of the following:

- A residential development of more than 500 dwelling units (du)
- A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (sf) of floor space
- A commercial office building employing more than 1,000 persons or having more than 250,000 sf of floor space
- A hotel or motel, or both, having more than 500 rooms
- An industrial, a manufacturing, or a processing plant, or an industrial park planned to house more than 1,000 persons, occupying more than 40 ac of land, or having more than 650,000 sf of floor area
- A mixed-use project that includes one or more of the projects specified above
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 du project

If a public water system has fewer than 5,000 service connections, a “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.

The IRWD completed a WSA in 2005 for the City of Lake Forest’s Opportunity Study, which covered a total of 5,844 du, including 450 single-family units on the Project site. Therefore, 450 of the proposed 776 units are already included in the IRWD’s baseline demands, leaving only 326 units unaccounted for. The 450 units were also accounted for in the IRWD’s most recent 2015 UWMP. Water Code Section 10910 (the “Assessment Law”) requires a WSA for project approval for projects subject to the California Environmental Quality Act (CEQA) and meeting the definition of “project.” This section defines the term “project” to include residential development of more than 500 du or other types of development projects using a comparable amount of water. Therefore, the IRWD determined that a WSA for the proposed Project is not required.

Senate Bill 1374. SB 1374 requires that the annual report submitted to CalRecycle include a summary of the progress made in diversion of construction and demolition waste materials. In addition, SB 1374 required that CalRecycle adopt a model ordinance suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition waste materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt CalRecycle’s model by default. However,

adoption of such an ordinance may be considered by CalRecycle when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element (SRRE).

Assembly Bill 75. AB 75, passed in 1999, took effect on January 1, 2000. This bill adds new provisions to the PRC, mandating that State agencies develop and implement an Integrated Waste Management Plan (IWMP); it also mandates that community service districts providing solid-waste services report disposal and diversion information to the city, county, or regional agency in which the community service district is located.

Title 24 of the California Code of Regulations. Energy and water consumption by new buildings in California is regulated by the California Green Building Standard Standards Code, embodied in California Code of Regulations (CCR) Title 24. Title 24 provides efficiency standards for new construction and the rehabilitation of both residential and nonresidential buildings, including building energy consumption, water conservation, and operational efficiencies. Title 24 regulates building energy consumption for heating, cooling, ventilation, water heating, and lighting with regard to both electricity and natural gas, while also regulating water consumption through the installation of efficient plumbing fixtures. The efficiency standards apply to both new construction and rehabilitation of both residential and nonresidential buildings. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed Title 24 Building Code requirements. The 2016 Standards went into effect January 1, 2017, following approval by the California Building Standards Commission.

Assembly Bill 341. AB 341, enacted in 2011 and begun in 2012, changes the due date of the State agency waste management annual report to May. The bill makes a legislative declaration that it is the policy goal of the State of California that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by 2020.

Public Health and Safety Code Part 9.5, Section 115700. Public Health and Safety Code Part 9.5, Section 115700, requires the proper decommissioning of inactive wells to prevent the contamination of groundwater. The section provides specifics for the casting, securing, and marking of wells and the surrounding area. This section also provides that at minimum, permanently inactive wells shall be destroyed in accordance with standards developed by the Department of Water Resources pursuant to Section 13800 of the Water Code and adopted by the State Water Resources Control Board or local agencies in accordance with Section 13801 of the Water Code. Minimum standards recommended by the department and adopted by the state board or local agencies for the abandonment or destruction of groundwater monitoring wells or class one hazardous injection wells shall not be construed to limit, abridge, or supersede the powers or duties of the department, in accordance with Section 13801 of the Water Code.

4.18.3.3 Regional Regulations

Metropolitan Water District 2015 Regional Urban Water Management Plan. The MWD's 2015 Regional UWMP lists and describes the various uses, demand, supplies, target reductions, and compliance measures for 26 member agencies. These include 14 cities, 11 municipal water districts,

and one county water authority serving approximately 18.7 million people in Southern California. The 2015 Regional UWMP found that under the current supply demands for a multiple-dry-year scenario (i.e., drought conditions), the MWD would have sufficient supply to meet the projected growing demand for water from 2020 to 2040 while still meeting statewide reduction targets of 20 percent of 2009 levels by 2020. The MWD is currently working to develop programs to increase its water supply and create a large surplus during multiple-dry-year scenarios to ensure that water demands will still be addressed during emergency drought situations. With demands projected to be around 2.3 million af in 2040 during multiple-dry-year scenarios, the MWD would have a surplus of 2,000 af with current capabilities and 288,000 af with the implementation of the programs under development.

4.18.3.4 Local Regulations

City of Lake Forest Municipal Code. The following City of Lake Forest Municipal Code sections are relevant to utilities and service systems:

- **Section 15.04.020 Permit Required for Construction or Destruction of a Well:** This section outlines requirements for the proper construction and decommissioning of wells.
- **Section 8.02.001, Adoption of the California Building Code:** This section adopts and incorporates by reference the California Building Code (CBC) (which includes the California Green Building Standards [CALGreen] Code).

City of Lake Forest General Plan Public Facilities/Growth Management Element. The primary purpose of the Public Facilities/Growth Management Element is to ensure that growth and development correspond to the provision of adequate public facilities. The Public Facilities/Growth Management Element expresses the City's intention to ensure acceptable service levels for public facilities as development occurs. The following policies are relevant to utilities:

- **Policy 1.1:** Work closely with local water and sewer districts in determining and meeting community needs for water and sewer service.
- **Policy 2.1:** Work closely with local providers of energy and communications in determining and meeting community needs for energy and communications, and to underground overhead transmission facilities.

4.18.4 Methodology

Utility providers were sent a questionnaire requesting information regarding current service provided to the Project site and possible constraints or impacts to this service associated with Project build out, which is anticipated to occur in 2025. The impact analyses are based on the IRWD's response to the water and wastewater questionnaire, data obtained through websites, and planning documents adopted by the utility providers. Correspondence with utility providers is included in Appendix K.

4.18.5 Thresholds of Significance

The proposed Project may be deemed to have a significant impact with respect to utilities and service systems impacts if it would do the following:

- Threshold 4.18.1: Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects**
- Threshold 4.18.2: Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years**
- Threshold 4.18.3: Not result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments**
- Threshold 4.18.4: 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**
- Threshold 4.18.5: Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste**

The Initial Study, included as Appendix A, substantiates that impacts associated with the exceedance of wastewater treatment requirements would be less than significant. However, this threshold was removed from Appendix G during the CEQA updates mentioned previously. Therefore, all thresholds listed above are analyzed in this section.

4.18.6 Project Impacts

- Threshold 4.18.1: Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

Water.

Less than Significant Impact. As discussed previously, the IRWD provides domestic and recycled water service through an existing 24-inch domestic water main and an existing 12-inch recycled water main that cross the Project site near its southern boundary. These existing water and recycled water mains would be relocated. Consequently, portions of the existing water line system would need to be rerouted to be aligned with the proposed on-site street circulation system and lots. All rerouting of water facilities would be reviewed and approved by the City's Public Works Department and the IRWD. As described in Chapter 3.0, Project Description, 8-inch

domestic water lines and reclaimed water lines are proposed to be installed in each of the proposed Project's collector streets. These water lines would provide domestic water service and reclaimed water for landscaping for the proposed Project's various uses. The existing water well in the central portion of the Project site would also be sealed and decommissioned in accordance with Section 115700 of the Public Health and Safety Code and Section 13801 of the Water Code to prevent the contamination of groundwater. The proposed Project would increase demand for water, and on-site infrastructure would be required for the proposed Project to be completed. A discussion of water use during construction and operation of the proposed Project is included below.

Construction. Short-term demand for water may occur during demolition, excavation, grading, and construction activities on site. Water demand for soil watering (fugitive dust control), cleanup, masonry, painting, and other activities would be temporary and would cease at Project build out. Overall, short-term demolition and construction activities would require minimal water and are not expected to have any adverse impacts on the existing water system or available water supplies. Therefore, impacts associated with short-term demolition and construction activities would not require or result in the construction of new water treatment facilities or the expansion of existing facilities, and construction of the proposed Project would not require the need for new or expanded water entitlements. No mitigation would be required.

Operation. The proposed Project includes the installation of water distribution infrastructure as well as the relocation of IRWD lines on the southern edge of the Project site as described above. These improvements would be funded and constructed by the developer, built to IRWD standards, and offered for dedication to the IRWD.

An increase in long-term demand for water is anticipated to occur during operation of the proposed Project. The total average daily water demand for the existing uses on the Project site provided by the IRWD was approximately 3,341,316 gallons per year (gpy) in 2018 and 5,515,752 gpy in 2017. Table 4.18.B provides the estimated water demand on the Project site at Project build out. As shown in Table 4.18.B, the Project's proposed structures will result in a demand of approximately 61,029,460 gpy of potable water (landscaping water needs are calculated separately), which is 57,688,144 gpy greater than the water usage provided by the IRWD on site in 2018 and 55,513,708 gpy greater than the water usage provided by the IRWD on site in 2017.

As required of all new development in California, the proposed Project would comply with State law regarding water conservation measures, including pertinent provisions of Title 24 of the CCR regarding the use of water-efficient appliances, which are adopted in the City of Lake Forest's Municipal Code Section 8.02.001 by reference (Regulatory Compliance Measure AQ-4). Specific measures are listed below:

Table 4.18.B: Water Demand at Project Build Out

Land Use	Project Feature	Water Use Factors	Project Water Usage (gpd)	Project Water Usage (gpy)
Single-Family Residential Units	675 du	200 gpd/du	135,000	49,275,000
Senior Affordable-Housing Units	101 du	215 gpd/du	21,715	7,925,975
School	375 tsf	28 gal/tsf/day	10,489	3,828,485
Subtotal (potable water demand only)			167,204	61,029,460
Landscaping	N/A		103,274	37,695,010
Total (includes potable and recycled water demands)			270,478	98,724,470

Source: Land Use and Water Use Factors (IRWD 2018c). Provided by the IRWD in written correspondence dated November 28, 2018.

du = dwelling unit(s)
gal = gallon(s)
gpd = gallons per day
gpy = gallons per year
tsf = thousand square feet

- 1.28 gal per flush water closets (CALGreen)
- 2.0 gal per minute showerheads (CALGreen)
- 1.8 gal per minute kitchen faucets (CALGreen)

Additionally, residential units will also incorporate the following water efficiency and water conservation measures:

- Water-efficient plumbing fixtures that contribute to a 20 percent reduction in domestic and irrigation water demand.
- Provision of drought-tolerant plants for exterior landscape design.
- Installation of water-efficient irrigation systems that employ “smart” sensors that can tell if it has rained or if the landscape needs irrigation using moisture sensors.
- Use of recycled water for common area landscape irrigation.

Incorporation of these water conservation measures would reduce the water demands of the proposed Project. The 37,695,010 gpy of water needed for landscaping purposes will be provided by reclaimed water lines installed in each of the proposed Project’s collector streets.

According to the IRWD’s 2015 UWMP (IRWD 2016), the City’s projected water surplus in 2025 is expected to be 41,171 afy for a third-dry-year scenario as shown in Table 4.18.A. The increase in potable water demand as a result of the proposed Project (61,029,460 gpy or 187.29 afy) would represent a very small portion (0.45 percent¹) of the City’s projected

¹ 187.29 afy/41,171 afy

surplus water supply in 2025 under the worst-case scenario. Therefore, because the potable water demand associated with the proposed Project would only represent 0.45 percent of the surplus water supply in the IRWD's service area in 2025 under the worst-case scenario, the proposed Project would not necessitate new or expanded water facilities, and the IRWD would be able to accommodate the increased demand for potable water. Therefore, sufficient water supplies from existing entitlements are available to serve the proposed Project.

Additionally, an addendum to the 2010 Lake Forest SAMP, a water and sewer facility planning study prepared by the IRWD for a specific planning area or development proposal, would be required prior to final approval of the development plans. Section 1.2 of the IRWD Procedures Guidelines states, "Larger projects may require the preparation of a service feasibility study or a Sub-Area Master Plan (SAMP) to determine whether the existing IRWD facilities are adequate to serve the needs of the proposed development at build out or if new IRWD facilities are required to be constructed to handle the additional demands."¹

Therefore, given that the proposed Project would comply with the IRWD's standard requirements for facility planning and that adequate water distribution facilities would exist to serve the proposed Project, the proposed Project would not require the relocation or construction of new or expanded facilities beyond the on-site improvements detailed above. No mitigation would be required.

Wastewater.

Less than Significant Impact. Wastewater collection for the proposed Project would be provided by the IRWD, and treatment of wastewater generated by the proposed Project would be provided by the MWRP. As discussed above, the MWRP has a total design capacity of 28 mgd and currently treats an average wastewater flow of 20.3 mgd. Therefore, the MWRP is currently operating at approximately 72.5 percent of its daily design capacity. To serve the proposed Project, sewer lines would be extended onto the Project site. A gravity sewer system would be installed and connected to the existing 21-inch sewer line in Bake Parkway.

Construction. No significant increase in wastewater flows is anticipated as a result of construction activities on the Project site. Sanitary services during construction would be provided by portable toilet facilities, which transport waste off site for treatment and disposal. Therefore, during construction, potential impacts to wastewater treatment and wastewater conveyance infrastructure would be less than significant, and no mitigation would be required.

Operation. Project development would include the construction of new residential and school uses and is anticipated to result in an increase in wastewater generation during operation. The total daily average wastewater generated by the existing uses on the Project

¹ Procedural Guidelines and General Design Requirements (IRWD 2011). Website: <https://www.irwd.com/assets/files/Development%20Services/Procedural%20Guidelines%20and%20General%20Design%20Requirements%20%20Nov%202011.pdf> (accessed July 1, 2019).

site is negligible. As shown in Table 4.18.C, the proposed Project is estimated to generate 119,852 gpd of wastewater. The estimated increase in wastewater associated with the proposed Project would represent 1.6¹ percent of the MWRP’s remaining daily capacity. The increase of wastewater generated by the proposed Project is anticipated to be accommodated within the existing design capacity of the MWRP, which currently accepts 72.5 percent of its capacity.

Table 4.18.C: Wastewater Generation at Project Build Out

Land Use	Project Feature	Wastewater Flow Generation Factor Factors ¹	Project Wastewater Generation (gpd)	Project Wastewater Generation (gpy)
Single-Family Residential Units	675 du	150 gpd/du	101,250	36,956,250
Senior Affordable Housing Units	101 du	110 gpd/du	11,110	4,055,150
School	375 tsf	20 gal/tsf/day	7,492	2,734,580
Total			119,852	43,745,980

Source: Land Use and Water Factors. (IRWD 2018c). Provided by the IRWD in written correspondence dated November 28, 2018.

du = dwelling unit(s)
gal = gallon(s)
gpd = gallons per day
gpy = gallons per year
tsf = thousand square feet

As discussed above, the proposed Project would include the installation of a new gravity sewer system that would connect to the existing 21-inch sewer line in Bake Parkway. The installation of sewer facilities sufficient to serve a proposed Project is a standard condition for development projects. In addition, as discussed above, a SAMP addendum, a water and sewer facility planning study prepared by the IRWD for a specific planning area or development proposal, is required prior to final approval of the development plans.

Therefore, the proposed Project would not require, nor would it result in, the construction of new wastewater treatment or collection facilities or the expansion of existing facilities other than those facilities to be constructed on site. Therefore, impacts related to the construction of wastewater treatment or collection facilities and the capacity of the wastewater treatment provider would be less than significant, and no mitigation would be required.

Storm Water Drainage.

Less than Significant Impact. The capacity of the downstream storm drain network depends on peak discharge rates entering the system. In the existing condition, storm water runoff from the Project site drains into two existing drainages. Storm water runoff from the western/northwestern portion of the Project site drains southwesterly, and flow then channelizes in an on-site natural and partly paved drainage system located along the southwest Project site boundary. Storm water runoff from the eastern/southeastern portion of the Project

¹ 119,852 gpd/7.7 mgd

site drains southeasterly in an on-site natural and partly paved drainage prior to discharging to Serrano Creek.

In the proposed condition, 80.3 ac (65.8 percent) of the Project site would be impervious surface area. The remaining 41.7 ac (41.7 percent) of the site would consist of pervious area, which would contain landscaping that would minimize on-site erosion and siltation by stabilizing the soil. The proposed Project would result in a permanent increase in impervious area of 68.2 ac (an increase of 9.9 percent to 65.8 percent of the Project site). An increase in impervious area would increase the volume of runoff during a storm. However, the Project provides an integrated site design for storm water measures that incorporate water runoff, storm water management, bio swales, bio retention basins, and infiltration where feasible to reduce impacts on storm water infrastructure and down-stream impacts. As discussed in Section 4.10, Hydrology and Water Quality, the proposed Project would include a subsurface detention vault below Central Park, underground detention vaults in combination with proprietary biotreatment Best Management Practices (BMPs) at each of the five neighborhood parks, a bioretention facility along Serrano Creek, and a linear bioretention facility along A Street. These features would reduce flows during storm events so that they would not exceed predevelopment runoff rates or time of concentration by more than 5 percent. Therefore, peak discharge would not adversely affect the capacity of downstream networks, and construction or expansion of storm water drainage facilities would not be required. Therefore, impacts to storm water drainage facilities would be less than significant, and no mitigation would be required.

Electric Power.

Less than Significant Impact. The proposed Project includes a new on-site electrical system that would connect to the existing SCE lines surrounding the Project site. The Project proposes to underground the existing overhead 66-kilovolt (kV) power lines that are currently located on the east side of Bake Parkway within an existing 20 ft wide SCE utility easement. Impacts related to the undergrounding of the 66 kV power lines are discussed in other sections of this EIR. As discussed in Section 4.1, Aesthetics, the undergrounding of SCE lines would improve view quality for visitors to and around the Project site. As discussed in Section 4.9, Hazards and Hazardous Materials, the 66 kV lines would not present a significant electromagnetic-frequency hazard to staff members or students at the proposed school site. A discussion of electricity use during construction and operation of the proposed Project is included below.

Construction. Short-term construction activities would be limited to providing power to the staging area and portable construction equipment and would not substantially increase demand for electricity. Heavy equipment used for construction is primarily powered by diesel fuel. Temporary electric power would be provided via existing utility poles located on the east side of Bake Parkway. Given the limited nature of potential demand for electricity during construction and the availability of existing power lines adjacent to the Project site, there would not be a need to construct new or alter existing electric transmission facilities. Impacts to regional electricity supplies would be less than significant.

Operation. Operation of the proposed Project would increase on-site electricity demand compared to existing conditions. Current electricity usage on the Project site based on the

CalEEMod model output in the *Greenhouse Gas Analysis* is assumed to be 71,825 kWh/yr for the existing nursery operations.

As discussed in Section 4.6, Energy, the proposed Project is estimated to consume a total of 6,212,608 kWh/yr (6.2 gigawatts per year [GWh/yr]) of electricity with the implementation of energy efficiency measures and sustainability features as required by the Title 24 of the CBC (RCM AQ-4), which is 6,140,783 kWh/yr (6.14 GWh/yr) more than operation of the existing nursery. Specifically, the proposed Project would reduce electricity consumption by incorporating the following energy efficiency measures in the design of residential units in addition to complying with Title 24 requirements:

- Increasing insulation values in walls and attic spaces
- Limiting air leakage through the building envelope
- Controlling energy losses in the heating, ventilation, and air conditioning (HVAC) system (specifying high Seasonal Energy Efficiency Ratio (SEER) rated equipment and reducing duct leakage)
- Incorporating high-efficiency windows and doors
- Providing and installing ENERGY STAR® appliances
- Installing highly efficient lighting and lighting control systems
- Installation of EV charging stations at Central Park and the elementary school¹
- Installation of solar panels or solar ready construction of residential structures to the extent required by CALGreen

Total electricity consumption in Orange County in 2017 was 20,030.5 GWh. Therefore, the increased electricity demand associated with the proposed Project would be less than 0.03 percent of Orange County's total electricity demand. Service providers utilize projected demand forecasts in order to provide an adequate supply or plan for surplus in the service area. As discussed in Section 4.6, Energy, there are sufficient planned electricity supplies in the SCE service area for estimated net increases in energy demands through 2030.

Because the proposed Project would only represent a small fraction of electricity demand in Orange County, the Project would exceed Title 24 requirements, and there would be sufficient electricity supplies available, energy demand for the proposed Project would be less than significant. No mitigation would be required.

The supply and distribution network within the area surrounding the Project site would remain essentially the same as exists today, with the exception of on-site improvements to underground the existing overhead 66 kV power lines that are currently located on the east side of Bake Parkway within an existing 20 ft wide SCE utility easement, and levels of service

¹ EV charging stations at the proposed elementary school would be subject to SVUSD construction standards.

(LOS) to off-site users would not be adversely affected. The relocated and undergrounded distribution facilities on Bake Parkway would provide electrical service to the residential, school, and recreational uses. The proposed Project would not increase electrical demand beyond existing projections from the local electricity provider, and the Project site is within a developed service area with existing demand. Therefore, the proposed Project would not require the construction of any physical improvements related to the provision of electricity service that would result in significant environmental impacts, and the Project's potential impacts would be less than significant. No mitigation would be required.

Natural Gas.

Less than Significant Impact. Gas distribution services will be extended through all on-site streets from private streets to which the Project will connect. The developer will be responsible for construction connections to these distribution facilities and the backbone distribution systems for the Project.

Construction. Short-term construction activities would not result in demand for natural gas since construction activities/equipment would not require accessing existing adjacent natural gas facilities. Therefore, construction activities would not impact natural gas services, and the proposed Project would not require new or physically altered gas transmission facilities.

Operation. Operation of the proposed Project would result in increased demand for natural gas due to natural gas use on the Project site. Based on the CalEEMod output in the *Greenhouse Gas Analysis*, the natural gas usage on the Project site is assumed to be 177,650 kBTU/yr (1,776.5 therms/yr) for the existing nursery usage. The estimated natural gas demands of the proposed Project as provided in Section 4.6, Energy, is 11,797,707 kBTU/yr (117,977.7 therms/year). Therefore, the proposed Project would require an increase of approximately 11,620,057 kBTU/yr (116,020.6 therms/yr) of electricity compared to existing conditions.

Total natural gas consumption in Orange County in 2018 was 575.1 million therms. Therefore, natural gas demand associated with the proposed Project would be less than 0.02 percent of Orange County's total natural gas demand. The estimated increase in natural gas demand associated with the proposed Project would represent a very small fraction of the natural gas demand in Orange County with the incorporation of Title 24 requirements and green features (Regulatory Compliance Measure AQ-4).

As noted above, service providers utilize projected demand forecasts in order to provide an adequate supply or plan for surplus in the service area. As discussed in Section 4.6, Energy, it is anticipated that SoCalGas would be able to meet the natural gas demand in its service area through 2035. Because the proposed Project would only represent a small fraction of natural gas demand in Orange County, the Project would exceed Title 24 requirements, and there would be sufficient natural gas supplies available, natural gas demand for the proposed Project would be less than significant. No mitigation would be required.

The supply and distribution network within the area surrounding the Project site would remain essentially the same as exists today except for standard on-site improvements, and LOS to off-site users would not be adversely affected. Existing gas transmission and distribution services maintained by SoCalGas would provide natural gas service to the proposed Project. The proposed Project would not increase natural gas demand beyond existing projections from the local natural gas provider, and the Project site is within a developed service area with existing demand. Therefore, the proposed Project would not require the construction of any physical improvements related to the provision of natural gas service that would result in significant environmental impacts, and the Project's potential impacts would be less than significant.

Telecommunications Facilities.

Less than Significant Impact. Telephone, cable, and internet services existing along Rancho Parkway will be extended into the Project site at the Project's three entrances. Internal to the Project, the Project Developer will be responsible for constructing adequate telecommunication facility extensions to the various neighborhoods in the Project. Additionally, cable box locations will be carefully planned and coordinated with the utility company, the landscape architect, and the Developer to be unobtrusive and screened from public view where possible. The construction and expansion of these facilities would occur on site during the site preparation and earthwork phase and are not expected to impact any telephone, cable, or internet services offsite that serve the surrounding areas. Additionally, telecommunication facilities are generally installed concurrently with utility expansions, and impacts associated with the expansion of telecommunications facilities are already considered in the air quality, noise, and construction traffic analysis. Therefore, the proposed impacts associated with the relocation or construction of new or expanded telecommunication facilities and impacts would be less than significant. No mitigation would be required.

Threshold 4.18.2: Would the Project 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. As discussed under Threshold 4.18.1, the relatively small increase in water use would be accounted for in the anticipated growth rates for the City through the SAMP. The proposed Project would not necessitate new or expanded water entitlements, and the IRWD would be able to accommodate the increased demand for potable water under a worst-case scenario as forecasted in the 2015 IRWD UWMP. Additionally, in written correspondence dated November 19, 2018, the IRWD indicated that it would be able to adequately serve the proposed Project. Therefore, the IRWD would have sufficient water supplies available to serve the Project from existing entitlements and resources and would not require new or expanded entitlements. Therefore, impacts related to water supplies available to serve the Project during normal, dry, and multiple dry years would be less than significant, and no mitigation would be required.

Threshold 4.18.3: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact. As discussed under Threshold 4.18.1, although the Project would increase water demand on site, the increased wastewater flows from the proposed Project can be accommodated within the existing design capacity of the MWRP, which will serve the Project site. Additionally, the relatively small increase in wastewater generation would be accounted for in the anticipated growth rates for Lake Forest through the SAMP. Additionally, in written correspondence dated November 19, 2018, the IRWD indicated that it would be able to adequately serve the proposed Project. Therefore, the wastewater treatment provider that would serve the proposed Project would have adequate capacity to serve the Project's projected demand in addition to its existing commitments. Therefore, impacts related to wastewater generation would be less than significant, and no mitigation would be required.

Threshold 4.18.4: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. The Project site is located within OCWR's service area. OCWR owns and operates three landfills in Orange County that accept municipal solid waste. These include the Frank R. Bowerman Landfill in Irvine, which accepts commercial waste only; the Olinda Alpha Landfill in Brea, which accepts both public and commercial waste; and the Prima Deshecha Landfill in San Juan Capistrano, which also accepts both public and commercial waste. All three landfills are Class III and only accept nonhazardous municipal solid waste.

Regular trash pickup is provided by the City of Lake Forest through a contract with CR&R, Inc. CR&R provides and manages hazardous waste collection facilities at several locations throughout Orange County and collects solid waste, green waste (i.e., grass, tree, and shrub clippings), and items for recycling. The company provides three different carts for automated collection of waste, recyclables, and green waste. The closest household waste collection center location to the Project site is in Irvine, approximately 5 mi west of the Project site. Any waste considered unacceptable at the Frank R. Bowerman Landfill would be hauled to the household waste collection center.

The Frank R. Bowerman Landfill is the closest OCWR landfill to the proposed Project site, approximately 3 mi west of the Project site, and would be expected to provide solid waste disposal for the construction and operation of the proposed Project. The Frank R. Bowerman Landfill, which is permitted to receive a daily maximum of 11,500 tpd, receives an average of approximately 8,500 tpd. The landfill opened in 1990 and is scheduled to close in approximately 2053.

Solid waste generated by the existing uses on the Project site mainly consist of compostable organic plant matter that may be reused on site. As such, the estimated 8,760 pounds of solid waste generated by the proposed Project as illustrated in Table 4.18.D would be an increase relative to current conditions on site.

Table 4.18.D: Projected Solid Waste Generation

Land Use	Proposed Project	Generation Rate	Total Solid Waste Generated per Day (lbs)
Single-Family Residential	776 units	10 lbs/du/day	7,760
School	1,000 students	1 lb/student/day	1,000
Total			8,760

Source: CalRecycle. Estimated Solid Waste Generation Rates. Website: <https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates> (accessed 14 August 2019).

du = dwelling unit(s)
lb/lbs = pound/pounds

The increase in solid waste generated by the proposed Project would constitute approximately 0.15 percent of the remaining average daily capacity (3,000 tons per day) at the Frank R. Bowerman Landfill. The proposed Project would be served by a landfill with sufficient permitted capacity to accommodate its solid waste disposal needs. Therefore, the proposed Project would result in less than significant impacts related to solid waste and landfill facilities, and no mitigation would be required.

Threshold 4.18.5: Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than Significant Impact. Solid waste practices in California are governed by multiple federal, State, and local agencies that enforce legislation and regulations ensuring that landfill operations minimize impacts to public health and safety and the environment. The Project site is located within OCWR’s service area. An important part of OCWR’s mission is to apply sound environmental practices to ensure compliance with these regulations. Additionally, OCWR has an adopted a CIWMP that requires countywide facilities to meet the 15-year capacity requirements. OCWR is also obligated to obtain a Solid Waste Facilities Permit, a Storm Water Discharge Permit, and permits to construct and operate gas management systems and meet Waste Discharge Requirements. The LEA, the SCAQMD, and the RWQCB enforce landfill regulations related to health, air quality, and water quality, respectively. The proposed Project would not inhibit OCWR’s compliance with the requirements of each of the governing bodies.

AB 939 changed the focus of solid waste management from landfill to diversion strategies such as source reduction, recycling, and composting. The purpose of the diversion strategies is to reduce dependence on landfills for solid waste disposal. AB 939 established mandatory diversion goals of 25 percent by 1995 and 50 percent by 2000. CalRecycle tracks and monitors solid waste generation rates on a per capita basis. Per capita solid waste generation rates and total annual solid waste disposal volumes for the City of Lake Forest between 2011 and 2016 are shown in Table 4.18.E below. It should be noted that more recent data has not yet been made available.

Table 4.18.E: Solid Waste Generation Rates in Lake Forest

Year	Waste Generation Rates (pounds/person/day)		Total Disposal Tonnage (tons/year)
	Per Resident	Per Employee	
2011	4.6	10.3	65,028
2012	4.5	9.9	64,184
2013	4.4	9.6	64,771
2014	4.5	9.3	65,081
2015	4.4	9.1	64,856
2016	4.2	8.9	63,663

Source: Table 7-3, City of Lake Forest Existing Conditions Report (City of Lake Forest 2018).

The City has complied with State requirements to reduce the volume of solid waste through recycling and reuse of solid waste. As shown in Table 4.18.E, both the per capita waste generation rates and the total annual disposal tonnage in Lake Forest were at their lowest levels in 2016. The City’s per capita disposal rates in 2016 were 4.2 and 8.9 pounds per person per day for residents and employees, respectively. The City’s per capita disposal rate satisfies the target rate established by CalRecycle (of 10.6 pounds/person/day for residents and 24.2 pounds/person/day for employees).¹ Household waste recycling services are also provided through the City to comply with State-mandated solid waste reduction goals. Therefore, the proposed Project would comply with federal, State, and local statutes and regulations related to solid waste, and no mitigation would be required.

4.18.7 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services and utilities. The Project site is a nursery site in Lake Forest currently served by utility providers. The cumulative area for utilities is listed below for each individual utility provider.

4.18.7.1 Wastewater

The geographic area for the cumulative analysis for wastewater treatment is defined as the IRWD service area. Within its service area, the IRWD uses United States Census Bureau population information with population projections as well as existing land use and build out or zoned land use to project current and future wastewater flows. The proposed Project would not generate wastewater above the current capacity of the MWRP; furthermore, it is anticipated that the IRWD’s existing and planned wastewater treatment capacity would be sufficient to accommodate the growth forecasted within its service area, and development that is generally consistent with this forecast can be adequately served by the existing IRWD facilities. The proposed Project would not induce significant population, employment, or housing growth, either directly or indirectly.

¹ *Lake Forest General Plan Update: Existing Conditions Report*. (City of Lake Forest 2018c). Website: https://static1.squarespace.com/static/5abd4a977e3c3a6cd57d9c48/t/5be097d8c2241bf46b6623ba/1541445626140/LakeForestECR_Complete_110118_WebVersion.pdf (accessed August 14, 2019).

According to correspondence with the IRWD dated November 19, 2018, the IRWD will be able to adequately serve the proposed Project, and the SAMP addendum will analyze the need for any improvements, if necessary, to accommodate the additional wastewater demand. If the IRWD determines that new facilities or improvements to wastewater infrastructure are necessary to support the proposed Project, additional environmental analysis pursuant to CEQA may be required. In addition, the proposed Project would not contribute wastewater that would exceed the service capacity of the MWRP. Therefore, the proposed Project's contribution to wastewater generation in the IRWD service area would not be cumulatively considerable, and no mitigation would be required.

4.18.7.2 Potable Water

The geographic area for the cumulative analysis of water infrastructure includes the Project site and the IRWD's service area. According to correspondence with the IRWD dated November 19, 2018, the IRWD will be able to adequately serve the proposed Project, and the SAMP addendum will analyze the need for any improvements, if necessary, to accommodate the additional sewer loads. If the IRWD determines that new facilities or improvements to water infrastructure are necessary to support the proposed Project, additional environmental analysis pursuant to CEQA may be required. Therefore, the proposed Project's contribution to water demand in the City would not be cumulatively considerable, and no mitigation would be required.

4.18.7.3 Solid Waste

The geographic area for the cumulative analysis of solid waste infrastructure is OCWR's service territory. Development associated with the proposed Project would contribute to an increased demand for landfill capacity for solid waste. As stated previously, the landfill serving the Project site would be the Frank R. Bowerman Landfill, which is not scheduled to close until 2053. As discussed under Threshold 4.18.5 above, the proposed Project would only constitute approximately 0.15 percent of the remaining average daily capacity at the Frank R. Bowerman Landfill. Additionally the Frank R. Bowerman Landfill is currently only receiving 73.9 percent of the 11,500 tons it is permitted to receive. Therefore, the Frank R. Bowerman Landfill has sufficient permitted capacity to provide adequate capacity for Orange County's solid waste needs, and with compliance with federal, State, and local statutes and regulations related to solid waste, which require reductions in solid waste generation, the proposed Project's contribution to solid waste impacts would not be cumulatively considerable, and no mitigation would be required.

4.18.7.4 Electricity

The geographic area for the cumulative analysis of impacts to the provision of electricity is the service territory of SCE. SCE's service area covers approximately 50,000 sq mi spanning Central, Coastal, and Southern California, with a total population of 15 million people. The projections of statewide electricity supply capacity demand rates are cumulative in nature. They are based on population and economic growth in addition to such physical variables as average temperature and water supplies (important to hydroelectric generation) in a given year. The total annual electricity consumption in the SCE service area in 2017 was 84,291.6 GWh. By 2030, consumption is anticipated to increase by approximately 12,000 GWh for the low-demand scenario and by 22,000 GWh for the high-demand scenario (CEC 2018c). While this forecast represents a large increase in

electricity consumption, the proposed Project's percentage of cumulative consumption would be less than 0.008 percent. Therefore, any increase in electrical demand resulting from the proposed Project would be incremental compared to the increase in regional electrical demand.

Title 24 of the CCR regulates energy and water consumption in new construction and regulates building energy consumption for heating, cooling, ventilation, water heating, and lighting. Therefore, in relation to the cumulative study area, the proposed Project would not generate a significant cumulative increase in demand for electricity or a significant disruption in service or service level. Therefore, the proposed Project's contribution to electricity impacts would not be cumulatively considerable, and no mitigation would be required.

4.18.7.5 Natural Gas

The geographic area for the cumulative analysis of impacts to the provision of natural gas is the service territory for SoCalGas. The SoCalGas service area covers approximately 24,000 sq mi, throughout Central and Southern California, from Visalia to the Mexican border. Total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms. Between 2018 and 2035, total natural gas consumption in the SoCalGas service area is forecast to remain steady for the low- and mid-demand scenarios and to increase by approximately 650 million therms in the high-demand scenario due to intense energy efficiency efforts (CEC 2018c). The proposed Project's percentage of cumulative consumption of natural gas in the SoCalGas service area would be less than 0.003 percent. Sufficient gas supplies and infrastructure capacity are available, or have already been planned, to serve past, present, and reasonably foreseeable projects. Furthermore, like the proposed Project, all future projects would be subject to Title 24 requirements and would be evaluated on a case-by-case basis to determine the need for specific distribution improvements. Because the natural gas provider has identified adequate capacity and additional development within the SoCalGas service area and because the proposed project would comply with Title 24, the proposed Project's contribution to natural gas impacts would not be cumulatively considerable, and no mitigation would be required.

4.18.7.6 Telecommunications Facilities

The geographic area for the cumulative analysis of impacts to the provision of natural gas is Lake Forest. Telephone, cable, and internet services are provided to residents through private providers of these services. The construction and expansion of telecommunication facilities for the proposed Project would occur on site and are not expected to impact any telephone, cable, or internet services offsite that serve the surrounding areas. Likewise, construction and expansion of telecommunication facilities would generally occur on site to extend through proposed related developments. Therefore, cumulative impacts associated with the relocation or construction of new or expanded telecommunication facilities would be less than significant. No mitigation would be required.

4.18.8 Level of Significance Prior to Mitigation

The proposed Project would have no significant and impacts related to utilities and service systems prior to the implementation of Mitigation Measures.

4.18.9 Regulatory Compliance Measures and Mitigation Measures

4.18.9.1 Regulatory Compliance Measures

The proposed Project would comply with the following regulatory standards, the implementation of which are intended to reduce impacts related to utilities.

RCM AQ-4 Title 24 California Code of Regulations (CCR). Prior to issuance of building permits, the City of Lake Forest Director of Community Development, or designee, shall ensure that the project design complies with the 2019 Building Energy Efficiency Standards (Title 24 CCR) energy conservation and green building standards.

RCM GHG-14 Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Appliances installed in project buildings will comply with the energy efficiency requirements in Title 20 CCR, Appliance Energy Efficiency Standards. All appliances shall be Energy Star appliances.

4.18.9.2 Mitigation Measures

The proposed Project would not result in significant impacts. Therefore, no mitigation would be required.

4.18.10 Level of Significance after Mitigation

The proposed Project would have no significant and impacts related to utilities and service systems.

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4.19 WILDFIRE

This section describes the existing setting and wildfire risks in the City of Lake Forest (City), which is in the south-central area of Orange County (County). This section evaluates the potential impacts of the proposed Project with regard to wildfire and post-wildfire environmental risks. This section is based on:

- Federal, State, and local policies;
- City of Lake Forest General Plan:
 - Safety and Noise Element (1994a);
 - Public Facilities and Growth Management Element (1994b)
- City of Lake Forest 2040 General Plan Existing Conditions Report, Chapter 8: Hazards, Safety, and Noise (2018a)
- County of Orange and Orange County Fire Authority (OCFA) *Local Hazard Mitigation Plan* (2015);
- California Department of Forestry and Fire Protection (CAL FIRE) fire hazard severity zone (FHSZ) maps (2012b);
- California Department of Conservation maps (2015);
- *Preliminary Hydrology Analysis* (Hunsaker & Associates 2019); and
- *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical 2017).

4.19.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). One letter from OCFA included comments related to wildfire. The letter from OCFA (July 31, 2018) suggested that the significance conclusion in the Hazards and Hazardous Materials section of the IS/NOP related to wildland fire hazards be revised to reflect that a Fuel Modification Conceptual Plan and a Fire Protection Plan with Ember Mitigation have been approved for the proposed Project. Since the IS/NOP was circulated in July 2018, the City's Local Guidelines for Implementing CEQA (2017) (which is more commonly referred to as the Local CEQA Guidelines) have been updated to be consistent with the revised State CEQA Guidelines (2019). Among other changes, the revised Local CEQA Guidelines replaced the Hazards and Hazardous Materials threshold question related to wildfire that OCFA commented on with four different questions regarding wildfire. Because none of the following thresholds related to wildfire were addressed in the IS/NOP, they will be addressed in the following analysis.

4.19.2 Existing Environmental Setting

A wildfire is a nonstructural fire that occurs in vegetative fuels. Wildfire generally does not include prescribed or controlled fires set by firefighters to manage fuel loads in fire-prone landscapes. Wildfires can occur in undeveloped areas and spread to urban areas where the landscape and

structures are not designed and maintained to be ignition resistant. A wildland-urban interface (or WUI) is an area where urban development is located in proximity to open space or “wildland” areas. The potential for wildland fires represents a hazard where development is adjacent to open space or within close proximity to wildland fuels or designated FHSZ. Steep hillsides and varied topography can also contribute to the risk of wildland fires. Fires that occur in WUI areas may affect natural resources as well as life and property.

Wildfire ignition sources may include: lightning, improperly managed camp fires, cigarettes, arson, sparks from automobiles, lawnmowers, and maintenance equipment, and other sources. Wildfire spread is often dramatically exacerbated when prolonged hot and dry weather conditions are coupled with strong wind events. In Southern California, wildfire season has historically extended from late summer through fall, when most vegetative fuels are dried out and Santa Ana wind events are most common. However, climate change has increasingly led to conditions that are conducive to wildfire spread throughout much of the year. Key factors in assessing wildland fire risk include potential ignition sources, building materials and design, community design, structural density, the presence of slopes and vegetative fuels, fire occurrence and weather, as well as occurrences of drought (County of Orange & OCFA 2015).

CAL FIRE has mapped areas of significant fire hazards in the State through its Fire and Resources Assessment Program (FRAP). These maps place areas of California into different FHSZ, based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where CAL FIRE is responsible for wildland fire protection and generally located in unincorporated areas is classified as a State Responsibility Area (SRA). Where local fire protection agencies (e.g., OCFA) are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA). CAL FIRE currently identifies the Project site as an LRA. In addition to establishing local or State responsibility for wildfire protection in a specific area, CAL FIRE designates areas as very high fire hazard severity zones (VHFHSZ) or non-VHFHSZ.

According to the CAL FIRE Very High Fire Hazard Severity Zone Maps for the Orange County Region, the Project site is designated as a non-VHFHSZ (CAL FIRE 2012b). The Project site is currently being used as a wholesale plant nursery. Although the plants being grown on the Project site are generally combustible, the Orange County *Local Hazard Mitigation Plan* (2015) identifies the Project site as having a moderate fuel hazard ranking (County of Orange & OCFA 2015). The areas immediately surrounding the Project site are developed with commercial, industrial, and residential uses; however, a finger of undeveloped land extends from the Whiting Ranch Wilderness Park to the center median of State Route 241 (SR-241), approximately 0.2 mile (mi) northeast of the Project site. This undeveloped land is designated as a VHFHSZ. The foothills of the Santa Ana Mountains, which feature steep slopes, combustible vegetation, and regrowth from recent wildfires, are located approximately 1.3 mi north of the Project site. This area, which includes portions of Whiting Ranch, Foothill Ranch, and Portola Hills, is designated as a VHFHSZ, as identified by CAL FIRE.¹ The foothills

¹ California Department of Forestry and Fire. FHSZ Viewer. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed August 7, 2019).

of the Santa Ana Mountains to the northeast of the Project site are designated as a High FHSZ in an SRA.¹

4.19.3 Regulatory Setting

4.19.3.1 Federal Regulations

National Incident Management System (NIMS). The NIMS provides a systematic, proactive approach to guide government agencies, nongovernmental organizations, and the private sector to work together to prevent, report to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property harm to the environment. The City participates in NIMS, which improves its ability to prepare for and respond to potential incidents and hazard scenarios.

4.19.3.2 State Regulations

CAL FIRE and Resources Assessment Program. CAL FIRE publishes maps that predict the threat of fire for each county within the State. LRAs, SRAs, or Federal Responsibility Areas (FRAs) are classified as either VHFHSZ or non-VHFHSZ based on factors including fuel availability, topography, fire history, and climate. The 2012 Strategic Fire Plan for California was generated by CAL FIRE to provide guidelines and objectives in order to account for associated fire impacts.

California Fire Code (CFC). Chapter 8.24.010 of the City of Lake Forest Municipal Code adopts the CFC, which is updated every 3 years. The CFC includes regulations for emergency planning, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Several fire safety requirements include: installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Strategic Fire Plan. This statewide plan is a strategic document that guides fire policy for much of California. The plan is aimed at reducing wildfire risk through pre-fire mitigation efforts tailored to local areas through assessments of fuels, hazards, and risks.

California State Hazard Mitigation Plan. The purpose of the State Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural- and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities emphasizing partnerships among local, State, and federal agencies as well as the private sector.

California Government Code. California Government Code §51175 defines VHFHSZ and designates lands considered by the State to be a very high fire hazard.

California Government Code §51189 directs the Office of the State Fire Marshal to create building standards for wildland fire resistance. The code includes measures that increase the likelihood of a

¹ California Department of Forestry and Fire. FHSZ Viewer. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed August 7, 2019).

structure withstanding intrusion by fire (e.g., building design and construction requirements that use fire-resistant building materials) and provides protection of structure projections (e.g., porches, decks, balconies, and eaves) and structure openings (e.g., attics, eave vents, and windows).

California Public Resources Code (PRC). The State's Fire Safe Regulations are set forth in PRC §4290, which include the establishment of SRAs. PRC §4291 sets forth defensible space requirements, which are applicable to anyone that ...owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush covered lands, grass-covered lands, or land that is covered with flammable material (§4291(a)).

Assembly Bill 337. Per Assembly Bill (AB) 337, local fire prevention authorities and CAL FIRE are required to identify VHFHSZ in LRAs. Standards related to brush clearance and the use of fire resistant materials in FHSZ are also established.

California Code of Regulations (CCR).

CCR Title 8 (Industrial Relations). In accordance with CCR Title 8 §1270 and §6773 (Fire Prevention, and Fire Protection and Fire Equipment), the California Occupational Safety and Health Administration (Cal/OSHA) establishes fire suppression service standards. The standards range from fire hose size requirements to the design of emergency access roads.

CCR Title 14 (Natural Resources). Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

CCR Title 19 (Public Safety). Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

CCR Title 24 (California Building Standards Code). The CFC is set forth in Part 9 of the Building Standards Code. The CFC, which is pre-assembled with the International Fire Code (IFC) by the International Code Council (ICC), contains fire-safety building standards referenced in other parts of Title 24.

California Health and Safety Code §13000 et seq. and California Building Code (CBC). State fire regulations are set forth in §13000 et seq. of the California Health and Safety Code, which is divided into "Fires and Fire Protection" and "Buildings Used by the Public." The regulations provide for the enforcement of the CBC and mandate the abatement of fire hazards.

The California Health and Safety Code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

California Health and Safety Code Division 11 (Explosives). Division 11 of the California Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 et seq. establishes regulations related to

explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

California Health and Safety Code Division 12.5 (Buildings Used by the Public). Division 12.5 establishes requirements for buildings used by the public, including essential services buildings, earthquake hazard mitigation technologies, school buildings, and post-secondary buildings.

California Residential Code §R337. Section R337 establishes minimum standards for the protection of life and property by increasing the ability of a building located in any FHSZ within an SRA or any WUI Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses. This section regulates materials and construction methods for exteriors susceptible to wildfire exposure.

California Building Code (CBC), Chapter 7A. Chapter 7A applies to building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a WUI Fire Area. This section of the CBC establishes minimum standards for features such as fire-retardant-treated wood and wood shingles, surface treatment protection, ignition-resistant construction, roof coverings and gutters, vents, exterior walls and coverings, exterior porch ceilings, underfloor protection, exterior windows, skylights, and doors, decking, and accessory structures.

Executive Order N-04-19. On January 9, 2019, Governor Newsom announced Executive Order (EO) N-04-19, which requires State agencies to identify innovative and sustainable solutions to address the State's wildfire crisis, such as (e.g., upgraded fire detection technology).

Executive Order N-05-19. On January 9, 2019, Governor Newsom also announced EO N-05-19, which requires CAL FIRE and other State agencies to compile policy and regulatory recommendations concerning wildfire mitigation, emphasizing environmental sustainability and public health. EO N-05-19 requires the incorporation of socioeconomic analysis when conducting risk management of wildfires and mandates that agencies identify geographic areas with populations that are more vulnerable to the impacts of wildfires.

4.19.3.3 Regional Regulations

OCFA Fire Master Plans for Commercial & Residential Development, Guideline B-09. Guideline B-09 of the 2017 Fire Master Plans for Commercial & Residential Development establishes general guidelines pertaining to the installation 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. The proper installation and maintenance of fire access roadways, the proper sitting of hydrants, adequate water supply, and proper access to structures are essential in enabling effective emergency response and firefighting operations.

County of Orange and OCFA Local Hazard Mitigation Plan (2015). This Plan identifies risks and vulnerabilities, establishes hazard mitigation strategies, describes emergency organization, task assignments, and general procedures, and provides for coordination of response in the event of an emergency. The Plan does not identify specific emergency response or evacuation routes.

4.19.3.4 Local Regulations

Lake Forest General Plan. The City of Lake Forest General Plan Safety and Noise Element (1994a) and Public Facilities and Growth Management Element (1994b) identify goals and policies related to fire protection services. According to the Safety and Noise Element, Lake Forest is subject to both wild and urban fires. The natural vegetation in the region is highly prone to wildfire, and a fire in the adjacent Cleveland National Forest could spread to developed areas in Lake Forest. The City will reduce the potential for dangerous fires by coordinating with OCFA to implement fire hazard education, fire protection, and fuel modification programs. Goals and policies from both the Safety and Noise Element and Public Facilities and Growth Management Element are listed below.

- **Safety and Noise Element (1994):**

- Goal 4.0** Improved ability of the City to respond to natural and human-related emergencies.

- Policy 4.1** Support the development of local preparedness plans and multi-jurisdictional cooperation and communication for emergency situations.

- Goal 2.0** Protection of the community from hazards associated with aircraft overflights, hazardous materials use, fire, and ground transportation.

- Policy 2.4** Reduce the risk to the community from fire.

- Goal 1.0** Reduction in the risk to the community from hazards associated with geologic conditions, seismic activity, and flooding.

- Policy 1.1** Reduce the risk of impacts from geologic and seismic hazards.

- Policy 1.2** Protect the community from flooding hazards.

- **Public Facilities and Growth Management Element (1994):**

- Goal 3.0** Effective coordination with Orange County Fire and Orange County Sheriff's Department.

- Policy 3.1** Work closely with Orange County Fire and the Orange County Sheriff's Department in determining and meeting community needs for safety facilities and services

- Policy 3.2** Periodically evaluate level of service to ensure that Lake Forest has appropriate levels of fire, police and emergency medical services.

City of Lake Forest Municipal Code.

Title 6, Health and Sanitation (6.16 Hazardous Materials). This section discusses hazardous materials including disclosure to OCFA.

Title 7, Subdivisions (7.08.145 Fire Protection). This section discusses the requirements for subdivisions in high or extremely high hazard areas, including providing appropriate fire protection by means of fire breaks, fuel modification programs, access roads, sufficient water supply, landscaping, and open spaces.

Title 8, Buildings and Construction (8.02 California Building Code, 8.06 California Residential Code, 8.24 Fire Code). This section includes the adoption of the 2016 California Fire Code and the adoption of additional amendments.

Title 9, Planning and Zoning (9.144.070.7 Public Display of Fireworks). This section covers public firework displays, including requiring permits from OCFA or the Fire Chief.

Title 11, Peace and Safety (11.56 Fire Alarm Systems). This section covers regulations relating to fire alarm systems.

City of Lake Forest Emergency Preparedness Plan. Under State law, local governments are required to create and administer an Emergency Operations Plan (EOP) under the guidelines provided by the Federal Emergency Management Agency (FEMA). The State Office of Emergency Services (OES) adopts these emergency management guidelines for business activities in the Emergency Operations Center (EOC). City of Lake Forest Municipal Code §2.20.080 states that the Lake Forest Disaster Council is responsible for the development of the Emergency Preparedness Plan, which shall serve as the EOP and provide for the effective mobilization of the resources of the City, both public and private, to meet any condition constituting a local emergency, state of emergency, or state of war emergency.

4.19.4 Methodology

This section addresses factors that could expose people or structures to fire or post-fire flooding or landslides, risk or impair emergency response, or require installation of infrastructure that could exacerbate fire risk. Past case law supports that CEQA should evaluate a proposed project's impact on the environment (e.g., potential of a housing development to degrade water quality), rather than the environment's impact on a project (e.g., potential for an earthquake to destroy a housing development). In *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA v. BAAQMD) (Supreme Court of California 2015), the CBIA challenged BAAQMD's adoption of CEQA air pollutant significance thresholds that required analysis of impacts on "new receptors" (residents and workers drawn to an area as a result of a proposed project). The California Supreme Court found that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents," except where a proposed project may exacerbate those environmental hazards or conditions that already exist. Therefore, this section will not directly focus on the risk of wildfire to the Project, rather it will address whether the Project exacerbates the risk of a natural disaster by bringing new development to vulnerable areas. The analysis is based on review of FHSZ maps, local and regional Hazard Mitigation Plans, and Project conformance to OCFA fire codes and fire plans (including a Fuel Modification Plan).

4.19.5 Thresholds of Significance

The thresholds for wildfire impacts used in this analysis are consistent with Appendix G of the State CEQA Guidelines and the City's *CEQA Significance Thresholds Guide* (2019). If the proposed Project would be located in or near SRAs or lands classified as VHFHSZ, the proposed Project may be deemed to have a significant impact with respect to wildfires if it would:

- Threshold 4.19.1:** Substantially impair an adopted emergency response plan or emergency evacuation plan.
- Threshold 4.19.2:** Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- Threshold 4.19.3:** 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.
- Threshold 4.19.4:** 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.

The IS/NOP was prepared prior to the revised State CEQA Guidelines (2019) and, therefore, only addressed the Project's potential environmental impacts related to wildfire in the context of exposing people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (the Hazards and Hazardous Materials section of the IS/NOP determined that the Project would result in no impacts). Because none of the following thresholds related to wildfire were addressed in the IS/NOP, they are all addressed in the following analysis.

4.19.6 Project Impacts

Threshold 4.19.1: Would the Project impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. According to CAL FIRE VHFHSZ in the LRA map for Lake Forest, the Project site is in a non-VHFHSZ. The nearest VHFHSZ is located approximately 0.2 mi northeast of the Project site along Serrano Creek and terminates near the SR-241 center median. As discussed in Section 4.8.3, the Orange County Sheriff's Department and OCFA are the local agencies that would oversee emergency response and emergency evacuation at the Project site. OCFA has approved a conceptual Fire Master Plan for the Nakase Property, which identifies the proper size and location of fire suppression facilities (e.g., hydrants), adequate water supply, and fire access routes.

Construction. The Project site is near a VHFHSZ, but is not located in or near an SRA, as defined by CAL FIRE. All large construction vehicles entering and exiting the site would be guided by the use of personnel using signs and flags to direct traffic. The Project does not include any characteristics that would physically impair or otherwise interfere with emergency response or evacuation in the Project vicinity. The proposed Project may require temporary lane closures on Bake Parkway, Lake Forest Drive, and Rancho Parkway to allow for utility connections; however, temporary lane closures would be implemented consistent with the recommendations of the *California Temporary Traffic Control Handbook* (California Inter-Utility Coordinating Committee 2018). Among other things, the manual recommends early coordination with affected agencies

to ensure that emergency vehicle access is maintained. In this manner, officials can plan and respond appropriately to direct the public away from Bake Parkway, Rancho Parkway, or Lake Forest Drive, as appropriate, in the event of an emergency requiring evacuation. Therefore, construction of the proposed Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. No mitigation would be required.

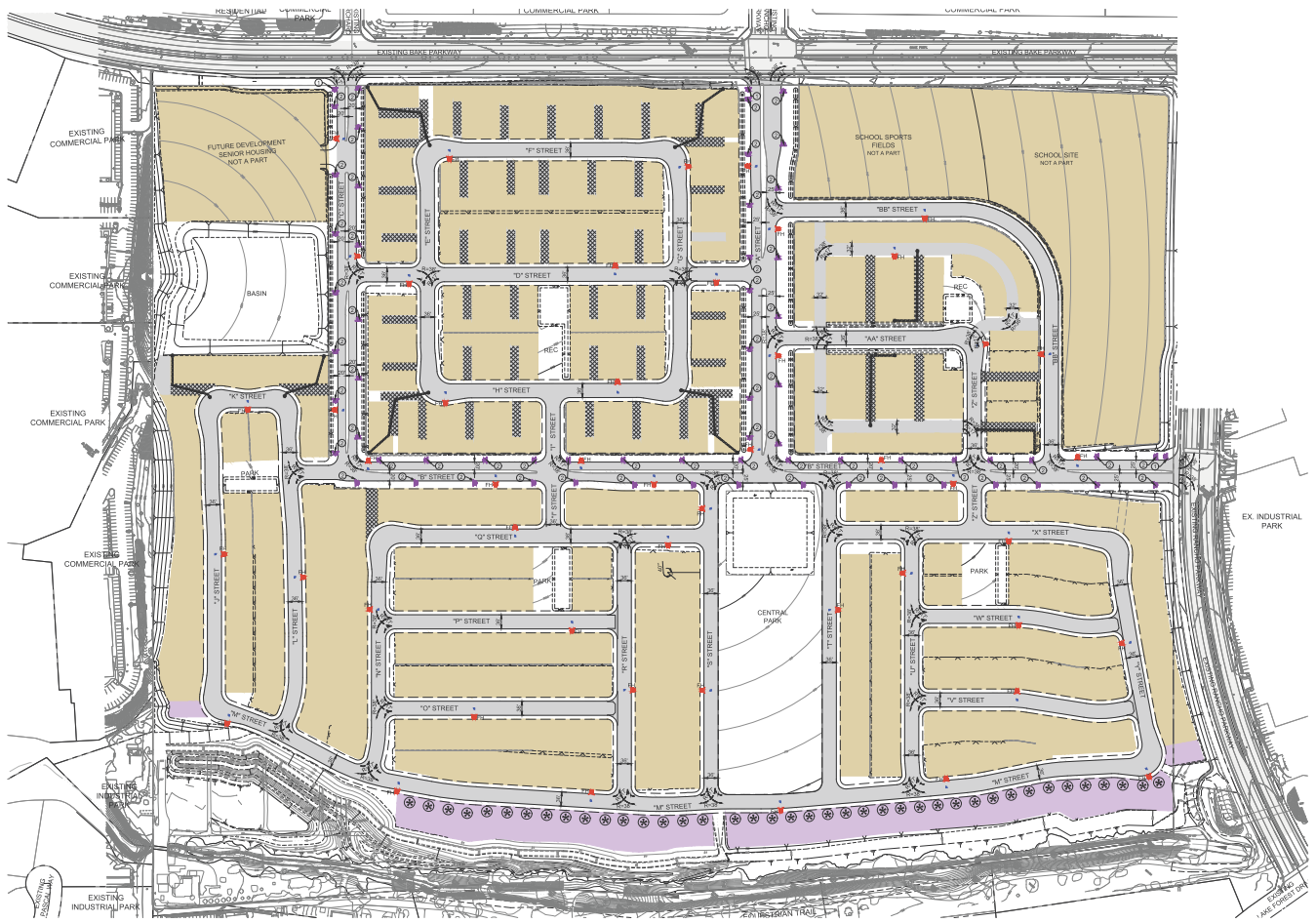
Operation. The proposed Project includes the development of up to 675 single-family residential units on approximately 61.4 acres (ac) of the Project site and up to 101 senior affordable housing units on 3.9 ac of the Project site. The proposed Project also includes parks, an internal circulation system, and an elementary school. According to the Traffic Impact Analysis (Urban Crossroads 2019), the proposed Project is not anticipated to result in any substantial traffic queuing along Bake Parkway, Lake Forest Drive, Rancho Parkway, or within the Project limits during Project operation. The City of Lake Forest General Plan Safety and Noise Element (1994a) does not officially designate any specific evacuation routes within the City. Roads that are used as response corridors and evacuation routes usually follow the most direct path to or from various parts of the community. For the Project site, the main corridors utilized would be Bake Parkway, Rancho Parkway, and Lake Forest Drive.

The proposed Project would provide emergency access via two streets along Bake Parkway and one street along Rancho Parkway. All roadways and structures within the proposed Project would be developed in accordance with City and OCFA emergency access standards. The proposed Project would also be required to comply with all applicable codes and ordinances for emergency vehicle access, which would ensure adequate access to, from, and on site for emergency vehicles.











OCFA approved a conceptual Fire Master Plan (refer to Figure 4.19.1) in February 2018, a conceptual Fire Protection Plan with Ember Mitigation (refer to Figure 4.19.2) in January 2018, and a conceptual Fuel Modification Plan (refer to Figure 4.19.3) in March 2018. The Fire Master Plan and Fire Protection Plan address specific fire prevention and access elements required by the Lake Forest Municipal Code and the CBC. The Fuel Modification Plan is required by the Lake Forest Municipal Code.

The Fire Master Plan (refer to Figure 4.19.1) establishes the proper location and adequacy of fire suppression facilities, as well as fire access routes on the Project site. The Fire Master Plan also identifies the locations of fire hydrants, a water supply for firefighting, and emergency access to residences and structures on the Project site. According to OCFA, adherence to the elements of the Fire Master Plan is directly correlated with the effectiveness of first responders, including fire and emergency medical personnel. The Area Plan for the Nakase Property meets or exceeds the requirements of OCFA to not hinder fire access and fire department and operations for the planned community. Figure 4.19.1 shows the locations of fire hydrants, fire lanes, fire hose pull distances, fire apparatus turning radii, lots that would require attic sprinkler protection, existing and proposed fire access roads, Radiant Heat Zones, and Ember Mitigation Zones on the Project site.

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LEGEND

-  PROPOSED FIRE HYDRANT
-  INDICATES BLUE REFLECTIVE FIRE HYDRANT MARKER. MARKER SHALL BE PLACED 6" FROM CENTERLINE OF STREET
-  PROPOSED FIRE LANE SIGNAGE AS INDICATED ON PLAN AND DETAILS HEREON
-  300' HOSE PULL DISTANCE - MAXIMUM SINGLE FAMILY DWELLING UNIT
-  ATTIC FIRE SPRINKLER PROTECTION: AUTOMATIC FIRE SPRINKLERS SHALL BE PROVIDED INTO THE ATTIC SPACES FOR LOTS 285 THROUGH 308 AND 448 THROUGH 433 PER THE CONCEPTUAL FUEL MODIFICATION PLAN, OCFA SR 220514
-  EXISTING FIRE DEPARTMENT ACCESS ROAD WITH ALL-WEATHER PAVED SURFACE MEETING OCFA GUIDELINE B-09 TO SUPPORT VEHICULAR LOADS OF 68,000 LBS WITH A ROAD BASE OVER SOIL COMPACTED TO A LEAST 90%
-  INDICATES O.C.F.A. REQUIRED TURNING RADI: 20' WIDE PATH WITH 17' INSIDE AND 38' OUTSIDE
-  PROPOSED FIRE DEPARTMENT ACCESS ROAD WITH ALL-WEATHER PAVED SURFACE MEETING OCFA GUIDELINE B-09 TO SUPPORT VEHICULAR LOADS OF 68,000 LBS WITH A ROAD BASE OVER SOIL COMPACTED TO A LEAST 90%
-  RADIANT HEAT ZONE: LOTS INDICATED ON THIS PLAN SHALL COMPLY WITH ALL PORTIONS OF THE 2016 CALIFORNIA BUILDING CODE CHAPTER 7A AND/OR 2016 CALIFORNIA RESIDENTIAL CODE SECTION R337, AS INDICATED ON THE NAKASE RANCH FIRE PROTECTION PLAN SR220513.
-  EMBER MITIGATION ZONE: LOTS INDICATED ON THIS PLAN SHALL COMPLY WITH PORTIONS OF THE 2016 CALIFORNIA BUILDING CODE CHAPTER 7A AND/OR 2016 CALIFORNIA RESIDENTIAL CODE SECTION R337 PERTAINING TO ROOFING VENTING ONLY AS INDICATED ON THE ON THE NAKASE RANCH FIRE PROTECTION PLAN SR220513.

LSA

FIGURE 4.19.1



NO SCALE

SOURCE: Hunsaker & Associates

I:\CLF1801\G\Fire Master Plan.cdr (8/15/2019)

Nakase Nursery/Toll Brothers
Fire Master Plan

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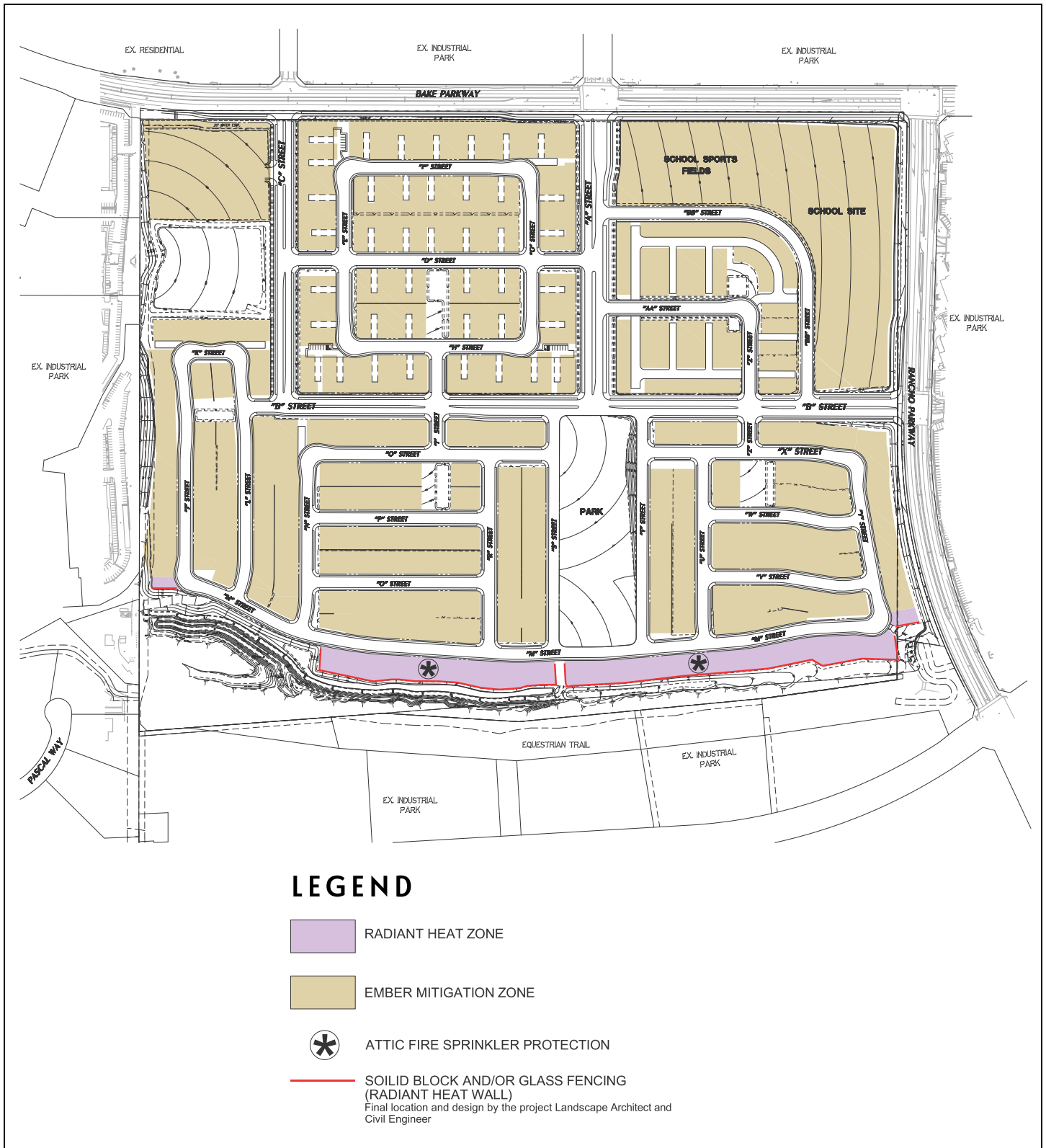


FIGURE 4.19.2

LSA



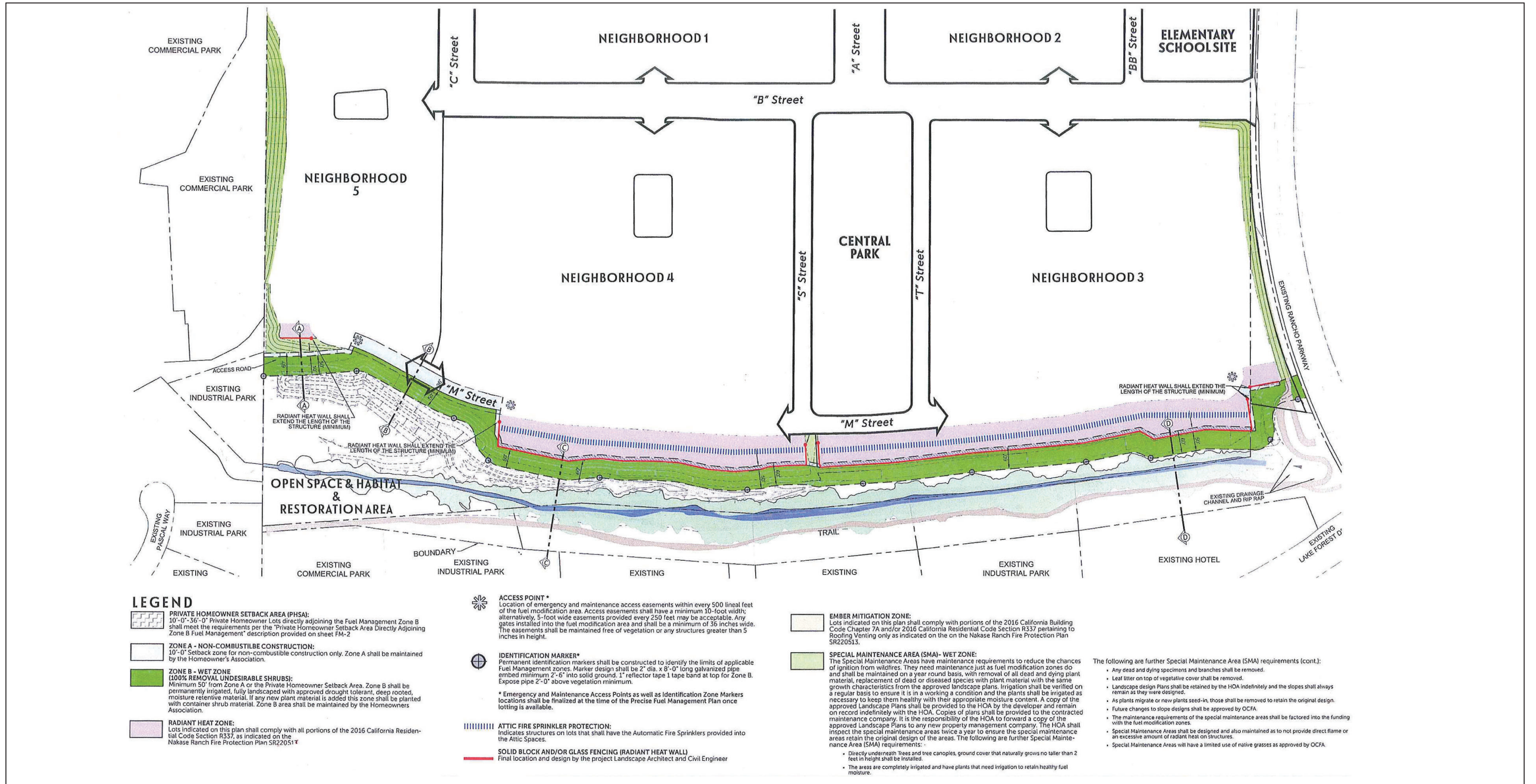
NO SCALE

SOURCE: Hunsaker & Associates

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Nakase Nursery/Toll Brothers
Fire Protection Plan

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LSA



0 125 250
FEET

SOURCE: C2 Collaborative

I:\CLF1801\G\Fuel Modification Plan.cdr (6/26/2019)

FIGURE 4.19.3

Nakase Nursery/Toll Brothers
Fuel Modification Plan

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The Fire Protection Plan (refer to Figure 4.19.2) identifies lots and structures that would be within the Ember Mitigation Zone and Radiant Heat Zone. The Fire Protection Plan also identifies lots and structures that would require an attic fire sprinkler system and the conceptual location of the radiant heat wall.

All three plans conform to City and OCFA standards and facilitate effective emergency response and operation. Therefore, operation of the proposed Project would not physically interfere with or impair an adopted emergency response or emergency evacuation plan. No mitigation would be required.

Threshold 4.19.2: Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact. Topography influences the movement of air, thereby directing a fire course. For example, if the percentage of uphill slope doubles, the rate of spread in wildland fire will likely double (County of Orange & OCFA 2015). Wind events magnify the risks of wildfire and have the potential to expose inhabitants of the City to elevated pollutant concentrations from a wildfire and the uncontrolled spread of wildfire from open space areas in the foothills of the Santa Ana Mountains in the northeastern areas of Lake Forest.

The proposed Project would introduce new development and a permanent population in an undeveloped area that does not contain any permanent residents. The Project site is located in a developed portion of Lake Forest. In its existing condition, the Project site is relatively flat terrain ranging in elevation from 705 to 735 feet (ft) across the northern half of the site with low points of approximately 685 ft at the southwest and southeast corners, and a ridge in the south central portion of the site ranging from 720 to 750 ft. Bake Parkway is roughly 10 ft above the northern perimeter of the Project site, and the commercial development to the south is 10 ft above to 25 ft below the southern perimeter. As previously stated, the Project site is not located in a VHFHSZ, nor is it located in an SRA. The nearest VHFHSZ is 0.2 mi northeast of the Project site. The area surrounding the Project site contains suburban development, but is characterized by hilly areas containing vegetative fuel and the increasingly steep slopes of the Santa Ana Mountains to the northeast.

The proposed Project includes the development of up to 675 single-family residential units on approximately 61.4 ac of the Project site and up to 101 senior affordable housing on 3.9 ac of the Project site. The proposed Project also includes parks, an internal circulation system, and an elementary school. As discussed in Section 4.13, Population and Housing, the Project is anticipated to result in a population increase of approximately 2,305 people. The Project proposes a residential development and school in an area characterized by existing residential and commercial uses. Adjacent roadways, including Bake Parkway, Rancho Parkway, and Lake Forest Drive, surround the Project site and would serve as fire breaks in the unlikely event of the uncontrolled spread of a wildfire. Additionally, SR-241 separates the Project site from the nearest VHFHSZ area to the northeast. With a right-of-way of more than 200 ft, it is expected that SR-241 would also serve as an

effective fire break in the unlikely event that a wildfire enters the WUI to the northeast of the Project site via the Whiting Ranch Wilderness Park.

As detailed in Regulatory Compliance Measure RCM FIRE-3, the proposed Project is required to adhere to a Fuel Modification Plan that complies with the *OCFA Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program*. Adherence to the Fuel Modification Plan would reduce the chance of structure ignition on the Project site in the unlikely event of a wildfire by requiring the use of fire-resistant building materials, the construction of radiant heat walls, the selection of non-combustible plant species, and the establishment of setback areas and areas that would be permanently irrigated. Furthermore, the proposed development would result in clearing, grading, paving, and revegetation according to OCFA requirements, resulting in the unavailability of vegetative/combustible materials in areas of the Project site that would be particularly vulnerable to wildfire spread from the native vegetation along Serrano Creek.

As stated previously, the Project site is not located in a VHFHSZ. Despite the VHFHSZ to the northeast of the Project site, the uncontrolled spread of a wildfire in the vicinity of the Project site is unlikely due to the existing non-combustible development and roadways, specifically SR-241 and Rancho Parkway. Impacts of downwind pollutant concentrations from a wildfire to occupants as a result of the Project would be negligible. Therefore, due to slope, prevailing winds, location, and other factors, the proposed Project would not exacerbate wildfire risks, and no mitigation is required.

Threshold 4.19.3: Would the Project 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?

No Impact. Utility and infrastructure improvements included as part of the Project are described in Section 3.0, Project Description. These improvements include the relocation of two existing water and recycled water mains and the subsequent rerouting of water facilities, the extension of sewer lines throughout the Project site, the installation of a gravity sewer system to connect to existing sewer lines in Bake Parkway, the undergrounding of existing overhead power lines along Bake Parkway, and the installation of an underground detention basin beneath the proposed Central Park to redirect runoff flows.

Although the Project would include internal on-site roadways, the proposed Project does not include any changes to public or private roadways that would exacerbate fire risk or that would result in impacts to the environment. Although utilities, including water facilities, sewer facilities, storm drain lines, and power lines would be modified and/or extended throughout the Project site, these improvements would be underground and would not exacerbate fire risk. All utility lines, pipes, utility junction boxes, and transformers will be located underground. Project design and implementation of utility improvements would be reviewed and approved by the City's Public Works Department as part of the Project approval process to ensure the proposed Project is compliant with all applicable fire codes, design standards, and regulations.

The Project site is not located in a VHFHSZ, nor is it located in or near an SRA. As discussed above, a VHFHSZ is located approximately 0.2 mi northeast of the Project site. The installation of Project-related utilities and an on-site roadway network would not exacerbate fire risk due to the Project site's location in an urban and built-out area outside of a designated fire hazard zone. Furthermore, the improved connectivity of water lines would aid in fire suppression compared to existing conditions on the Project site in the unlikely event of a wildfire. Therefore, the proposed Project would not require the installation or maintenance of associated infrastructure (e.g., roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment. There would be no temporary or ongoing impact to the environment, and no mitigation would be required.

Threshold 4.19.4: Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff post-fire slope instability, or drainage changes?

Less than Significant Impact.

Landslides. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking but can also occur as a result of erosion and downslope runoff caused by rain following a fire. According to the *Geotechnical Evaluation* (NMG Geotechnical 2017), landslides or other forms of natural slope instability do not represent a significant hazard to the Project because the site is located in a relatively flat area, and there is no evidence of landslides in the Project vicinity. Additionally, the Project site does not lie within a designated Landslide Hazard Zone (California DOC 2015). Further, as stated previously, the Project site is not located in a VHFHSZ or in or near an SRA. As discussed above in the response to Threshold 4.19.2, the Project would be required to adhere to the approved conceptual Fire Protection Plan, Fire Master Plan, and Fuel Modification Plan (Regulatory Compliance Measures RCM FIRE-1, RCM FIRE-2, and RCM FIRE-3, described further in Section 4.19.5.2). Adherence to these measures would reduce the likelihood of urban conflagration on the Project site in the unlikely event of a wildfire.

In the extremely unlikely event that a wildfire should spread to the Project site, it would not expose any on-site slopes to erosion and potential failure because, as discussed above, the Project site does not contain any steep slopes that are prone to landslide. The proposed Project would not expose people or structures to significant risks, including downslope landslides, as a result of runoff, post-fire slope instability, or drainage changes. There would be no impact to Project occupants or nearby residents or workers related to post-wildfire landslide risks, and no mitigation would be required.

Flooding. According to the FEMA Flood Hazard Map, the Project site is partially within Zone X (Area with Minimal Flood Hazard) of a 100-year floodplain and partially within a Zone AE Regulatory Floodway associated with the Serrano Creek Channel (FEMA 2018). Zone X designates areas of moderate flood risk, and are the areas between the limits of the base flood and the 0.2 percent annual chance flood, or 500-year flood. Zone AE includes areas subject to inundation by the 1 percent annual chance flood with base flood elevations determined.

Regulatory floodways are the channel of a river, and adjacent land must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation. Existing development surrounds the Serrano Creek Channel on both sides. Northeast of SR-241, Serrano Creek runs throughout a VHFHSZ (CAL FIRE 2012a). A fire northeast of the Project site could trigger increased downstream sediment movement, which could raise the elevation of potential flooding along Serrano Creek in the vicinity of the Project site. In the event that the upper Serrano Creek watershed were to experience a major fire, it is expected that the County would implement emergency Best Management Practices (BMPs) in Whiting Ranch Wilderness Park (wattles, sandbags, etc.) to limit the amount of additional sedimentation that enters Serrano Creek. Such measures would allow Serrano Creek to hydraulically convey any minor increases in sediment loads without increasing the risk of flooding on the Project site.

As discussed above in the response to Thresholds 4.19.1 and 4.19.2, the proposed Project would be required to adhere to the conceptual Fire Protection Plan, Fire Master Plan, and Fuel Modification Plan approved by OCF. Adherence to these plans would reduce the likelihood of urban conflagration on the Project site in the unlikely event of a wildfire. In addition, according to the *Preliminary Hydrology Analysis* (Hunsaker & Associates Irvine, Inc. 2019), the Project itself will not exceed the existing peak discharge for 2-year, 25-year, or 100-year frequency storm events and will reduce the potential for flooding conditions in downstream storm drain facilities and on private property as compared to existing conditions.

In the unlikely event that a wildfire should spread to the Project site, it is not expected that the Project would contribute any additional runoff or sedimentation to Serrano Creek or other downstream drainages. This is due to the lack of steep slopes that are prone to landslide or erosion on the Project site and the fact that the Project's drainage improvements would remain intact after a major wildfire, allowing them to continue to reduce the potential for flooding conditions in downstream storm drain facilities. Therefore, downslope or downstream flooding as a result of runoff, post-fire slope instability, or drainage changes are unlikely to expose occupants or structures to significant risks. Impacts to Project occupants related to post-wildfire flooding risks would be less than significant, and no mitigation is required.

4.19.7 Cumulative Impacts

The purpose of this section is to evaluate any additional incremental impact that the proposed Project is likely to cause over and above the combined impacts of recently approved and proposed projects in the City and its sphere of influence. As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and reasonably foreseeable projects within the cumulative study area for wildfire.

For the reasons outlined above in Section 4.19.6, Project Impacts, implementation of the proposed Project would not result in a significant cumulative impact related to wildfire. The proposed Project and all related projects are required to adhere to City, State, and federal regulations designed to reduce and/or avoid impacts related to wildfire. With compliance with these regulations, cumulative impacts related to wildfire would be less than significant.

Potential impacts of the proposed Project with regard to wildfire, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the increased risk of wildfire and impacts to resources and human life as a result of wildfire. However, each development application received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts with regard to wildfire and related risks, an investigation would be required to determine the nature and extent of the resources and identify the appropriate mitigation measures.

4.19.8 Level of Significance Prior to Mitigation

The proposed Project would result in less than significant impacts related to wildfire.

4.19.9 Regulatory Compliance Measures and Mitigation Measures

4.19.9.1 Regulatory Compliance Measures

The following Regulatory Compliance Measures are included in the proposed Project and are considered in the analysis of potential impacts related to wildfire. The City of Lake Forest considers these requirements to be mandatory; therefore, they are not mitigation measures or voluntary Project Design Features.

- RCM FIRE-1: Fire Protection Plan.** The Project shall adhere to Chapter 7A of the CBC and/or Section R337 of the California Residential Code (CRC). All structures in the Nakase community shall adhere to the standards from Chapter 7A of the CBC and/or Section R337 of the CRC pertaining to roofing and venting to help prevent the intrusion of embers into structures. Residences adjoining the Fuel Management Zones shall meet all applicable standards set forth in Section R337 of the CRC because those structures would have direct exposure to the native vegetation beyond the Fuel Management Zones.
- RCM FIRE-2: Fire Master Plan.** The Project Applicant/Developer shall develop a Fire Master Plan that identifies the proper installation and maintenance of fire access roadways, the locations of fire hydrants, a sufficient water supply, and emergency access to residences and structures within the Project site as required by the most current California Fire Code and Lake Forest Municipal Code.
- RCM FIRE-3: Fuel Modification Plan.** Section 8.24.030 of Chapter 8.24 of Title 8 of the Lake Forest Municipal Code requires that all new buildings to be built or installed in areas with or adjacent to land having hazardous combustible vegetation shall comply with the requirements in the edition of the OCFA *Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance*

Program in use at the time of plan submittal. In addition, all new buildings to be built or installed in hazardous fire areas¹ shall comply with the following:

1. A preliminary Fuel Modification Plan shall be submitted to and approved by the Fire Code Official prior to or concurrently with the approval of the tentative map.
2. A final Fuel Modification Plan shall be submitted to and approved by the Fire Code Official prior to the issuance of the grading permit.
3. The Fuel Modification Plan shall meet the criteria set forth in the Fuel Modification Section of OCFA C-05, *Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program*.
 - a. The fuel modification plan shall include provisions for the maintenance of the fuel modification in perpetuity.
4. The Fuel Modification Plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approval from the Fire Code Official.
5. All elements of the Fuel Modification Plan shall be maintained in accordance with the approval plan and are subject to the enforcement process outlined in the California Fire Code.

4.19.9.2 Mitigation Measures

The proposed Project would not result in significant impacts related to wildfire, and no mitigation is required.

4.19.10 Level of Significance after Mitigation

The proposed Project would not result in significant impacts related to wildfire.

¹ Hazardous fire areas include all areas identified within California Fire Code Section 4906.2 and other areas as determined by the Fire Code Official as presenting a fire hazard due to the presence of combustible vegetation, or the proximity of the property to an area that contains combustible vegetation.

5.0 ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would “feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant impacts of the project, and evaluate the comparative merits of the alternatives” (*State CEQA Guidelines*, Section 15126.6). This chapter identifies potential alternatives to the Nakase Nursery/Toll Brothers Project (proposed Project), evaluates the potential impacts of each alternative, and compares the potential impacts of each alternative against the proposed Project’s impacts, as required by CEQA.

Key provisions of the *State CEQA Guidelines* on alternatives (Section 15126.6[b] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR:

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly (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, and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no 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 the ‘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. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. 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]).
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (15126.6[f][2][A]).

- If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location (15126.6[f][2][B]).
- An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (15126.6[f][3]).

Pursuant to the guidelines stated above, a range of alternatives to the proposed Project is considered and evaluated in this EIR. These alternatives were developed in the course of project planning and environmental review. The discussion in this section provides:

1. A description and analysis of impacts for each of the alternatives considered;
2. Comparative analysis of each alternative that focuses on the potentially significant unavoidable environmental impacts of the proposed Project, e.g., agricultural and greenhouse gas (GHG) emissions (the purpose of this analysis is to determine whether alternatives are capable of eliminating or reducing the significant environmental impacts of the project to a less than significant level); and
3. Conclusions regarding the alternative's: (1) ability to avoid or substantially lessen the significant unavoidable impacts of the project; (2) ability to attain the project objectives (as stated below); and (3) merits compared to the merits of the proposed Project.

5.2 PROPOSED PROJECT

5.2.1 Project Objectives

As discussed in Section 3.10, Project Objectives, of this EIR, the following project objectives have been established to aid decision-makers in their review of the proposed Project and its associated environmental impacts:

- Provide a comprehensive plan for development of the Nakase's Property that implements the goals and policies of the Lake Forest General Plan.
- Provide a site design that is sensitive to the existing natural features, including Serrano Creek.
- Provide a balanced mix of single-family and attached senior affordable homes, open space, and active public and private uses.
- Accommodate public uses by incorporating a new elementary school site conveniently located within easy walking distance for Project site residents.
- Provide an exceptional trail system and on-site parks that enhance the quality of life of the larger community.

- Reduce vehicular traffic and peak-hour trips through thoughtful site planning that emphasizes connectivity, access, and mobility.
- Provide for logical, attractive, and safe pedestrian and bicycle connections within the community.
- Create high-quality residential homes and distinct, identifiable neighborhoods with a range of specifically targeted single-family product types.

5.2.2 Significant Adverse Unavoidable impacts of the Proposed Project

The following discussion focuses on alternatives that would reduce or avoid the significant adverse unavoidable impacts of the Proposed Project. The following is a summary of the impacts that are considered significant, adverse, and unavoidable after all mitigation is applied. These impacts are also described in detail in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures.

5.2.2.1 Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures.

Agricultural Resources. The proposed Project would conflict with the existing A-1 zoning and would convert 119.2 acres (ac) of Unique Farmland to non-agricultural uses, which would result in a significant impact to agricultural resources. Mitigation was considered to reduce the impact of the conversion of 119.2 ac of Unique Farmland to non-agricultural uses. However, the mitigation measures were not considered feasible; therefore, impacts pertaining to the conversion of Unique Farmland to a non-agricultural use from implementation of the proposed Project would be significant and unavoidable.

Greenhouse Gas Emissions. The proposed Project would be designed in compliance with adopted regulations aimed at reducing GHG emissions. Specifically, the project would meet the 2019 Building Energy Efficiency Standards (California Code of Regulations [CCR] Title 24) and the California Green Building Standards Code (CALGreen). Although compliance with CCR Title 24 and CALGreen would help to reduce the proposed Project's GHG emissions, the overall emissions attributable to the proposed Project are expected to exceed the South Coast Air Quality Management District (SCAQMD) thresholds of 3.84 million tons of carbon dioxide equivalent per Service Population per year (MT CO₂e/SP/yr) for 2025 and 2.88 MT CO₂e/SP/yr for 2030. Therefore, the proposed Project would result in a significant unavoidable project impact and significantly contribute to an unavoidable cumulative impact related to GHG emissions and conflict with an applicable GHG reduction plan, policy, or regulation.

5.3 ALTERNATIVES INITIALLY CONSIDERED BUT REJECTED FROM FURTHER CONSIDERATION

Section 15126.6(c) of the *State CEQA Guidelines* suggests that EIRs identify any alternatives that were considered by the Lead Agency but were rejected during the scoping process and briefly explain the reasons underlying the Lead Agency's determination. In evaluating an appropriate range

of alternatives to the proposed Project, a number of alternatives were considered and rejected for differing reasons by the City of Lake Forest (City).

The following is a discussion of the development alternatives considered during the environmental review process and the reasons they were not selected for detailed analysis in this Draft EIR.

5.3.1 Alternative Sites

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 impacts of the project. The key question and first step in the analysis is whether any of the significant impacts of the project would be avoided or substantially lessened by relocating the project. Only locations that would avoid or substantially lessen any of the significant impacts of the project need be considered for inclusion in the EIR (*State CEQA Guidelines*, Section 15126.6[f][2][A]). 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 applicant can reasonably acquire, control, or otherwise have access to the alternative site (*State CEQA Guidelines*, Section 15126.6[f][1]). If it is determined that no feasible alternative locations exist, the EIR must disclose the reasons for this conclusion (*State CEQA Guidelines*, Section 15126.6[f][2][B]).

No alternative locations to undertake the proposed Project are analyzed in the Draft EIR. The proposed Project involves development of the Nakase Property Area Plan (Woodley Architectural Group 2019) (hereafter referred to as the Area Plan) on the Project site. There is no other property in Lake Forest that would support a development similar to the proposed Project. The surrounding area is highly urbanized, and no land is currently available for development that is large enough (approximately 122 ac) to develop the proposed Project. In addition, the Project Applicant/Developer does not own or control any other property within Lake Forest or in the vicinity of the Project site that would be suitable for development of the Area Plan. Moreover, the Project Applicant/Developer cannot reasonably acquire or control an alternative site in a timely fashion that would allow for the implementation of a project with similar uses and square footage.

In addition, development of the proposed Project at an alternative site (assuming one was available) could potentially result in some environmental impacts that were similar to or greater than those of the proposed Project's environmental impacts, depending on the proximity of the alternate site to sensitive uses. Conversely, given that the Project site is located in a highly urbanized area, it is unlikely that relocating the proposed Project to another site would substantially lessen any of its impacts. The exception to this would be impacts related to agricultural resources. The City currently contains 18 parcels that are occupied by agricultural uses (general agricultural uses, horse ranches, nurseries, and other agriculture), totaling 192 ac of which 122 ac are the Project site. Because of the limited number of agricultural parcels in the City, development of the proposed Project on an alternative site could reduce or avoid impacts to agricultural resources.

Nevertheless, no alternative sites were considered feasible because the Project Applicant/Developer does not own or control another Project site in Lake Forest, no suitable alternative site is available that would achieve the underlying purpose and objectives of the proposed Project, and development

of the proposed Project on an alternative site would likely result in many of the same environmental impacts as development of the proposed Project on the Project site. Therefore, this alternative was rejected from further consideration.

5.3.2 No Project/No Development

This alternative would have assumed that the proposed Project site would remain in the same condition as it was at the time the Notice of Preparation (NOP) was published and no new development of any kind would occur on the Project site. This alternative was deemed infeasible as the current owners of the Project site—the Nakase Family—have indicated their intention to close the nursery and sell the property. As shown on Figure 3.5, General Plan Land Use and Business Development Overlay, the Project site is designated for Business Park uses on the City’s General Plan Land Use Map. The Business Park designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. Therefore, in the absence of the proposed Project, it could be reasonably assumed that Business Park uses would be developed on the Project site. Development of Business Park uses on the Project site is evaluated as Alternative 1 below.

5.3.3 Public Park

As shown on Figure 3.5, General Plan Land Use and Business Development Overlay, the Project site is designated for Business Park uses on the City’s General Plan Land Use Map. The Business Park designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. Development of a public park on the Project site would require a General Plan Amendment and Zone Change. It would also require acquisition of the Project site by the City of Lake Forest.

Development of park uses on the Project site would result in the same impact to Unique Farmland (i.e., conversion of 119.2 ac of Unique Farmland to non-agricultural uses) as the proposed Project. The primary source of GHG emissions associated with a public park would be vehicle trips. Because vehicle trips would likely be the same or less than the vehicle trips associated with the existing nursery, it is likely that GHG impacts would be less than that of the proposed Project.

Nevertheless, this alternative was deemed infeasible as the City recently developed the Lake Forest Sports Park and has not (1) designated the Project site for park uses in the General Plan; or (2) set aside funding for the acquisition of the land and development of park uses. In addition, development of a public park on the Project site would not achieve any of the intended Project objectives.

5.3.4 Community Garden/Farm

As shown on Figure 3.5, General Plan Land Use and Business Development Overlay, the Project site is designated for Business Park uses on the City’s General Plan Land Use Map. The Business Park designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. Development of a community garden/farm on the Project

site would require a General Plan Amendment.¹ It would also require acquisition of the Project site by the City of Lake Forest or another entity capable of developing and managing a community garden or farm on the Project site.

Development of a community garden/farm would avoid potential impacts to Important Farmland because the 119.2 ac of Unique Farmland on the Project site would not be converted to non-agricultural use. The primary source of GHG emissions associated with a community garden/farm would be vehicle trips. Because vehicle trips would likely be the same or less than the vehicle trips associated with the existing nursery, it is likely that GHG impacts would be less than that of the proposed Project.

This alternative was deemed infeasible because the City recently developed the Lake Forest Sports Park and has not (1) designated the Project site for agricultural uses in the General Plan; or (2) set aside funding for the acquisition of the land and development of park uses. In addition, there are no pending applications for development or operation of a community garden/farm on the Project site, and any such project would not achieve any of the Project objectives.

5.4 ALTERNATIVES UNDER CONSIDERATION

Section 21100 of the Public Resources Code (PRC) and Section 15126 of the *State CEQA Guidelines* require an EIR to identify and discuss a No Project Alternative and a reasonable range of alternatives to the proposed Project that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental impacts. Based on the criteria listed above, the following four alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the proposed Project but that may avoid or substantially lessen any of the significant impacts of the proposed Project. Therefore, the alternatives considered in this EIR include the following:

- **Alternative 1 – No Project Alternative:** CEQA requires analysis of a “No Project” Alternative. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project. According to *State CEQA Guidelines* Section 15126.6(e)(3)(C), the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. Because the current owners of the Project site have indicated their intent to close the nursery and sell the property, it is unlikely the Project site would continue to be used as a commercial nursery. As shown on Figure 3.5, General Plan Land Use and Business Development Overlay, the Project site is designated for Business Park uses on the City’s General Plan Land Use Map. For this reason, under Alternative 1, it is assumed that while the proposed Area Plan would not be developed, the Project site would not remain in the existing condition, and the Project site would be developed to the maximum intensity allowed under the existing General Plan

¹ The existing Lake Forest General Plan does not include any agricultural land use designations.

designation of Business Park. The Business Park designation is intended to provide a mix of uses as allowed under the Commercial, Professional Office, and Light Industrial designations. Alternative 1 would include 1,841,700 square feet (sf) of Business Park use.

- **Alternative 2 – Urban Industrial/Residential:** The Project site would be developed in accordance with the Urban Industrial-Residential land use designation, which is a new land use designation being considered in the Lake Forest General Plan update. The Urban Industrial-Residential land use designation allows for a mix of light industrial and commercial uses at a density of 25 residential units per acre and a maximum floor-to-area ratio (FAR) of 1.0:1. Alternative 2 includes: 592 residential units; 89 senior affordable rental units; 4 acres (ac) of commercial/industrial uses; a 11.5 ac school; 21.41 ac of parks, open space, and habitat restoration area; and a 5.6 ac community garden.
- **Alternative 3 – No School Alternative:** Alternative 3 includes: development of up to 675 single-family residential units; 101 senior affordable rental units; 21.41 ac of parks, open space, and habitat restoration area; and a 3.5 ac community garden.
- **Alternative 4 – Reduced Project:** Alternative 4 includes: development of 600 single-family residential units; 90 senior affordable rental units; 11.5 ac elementary school; a 2 ac community garden; and 19.41 ac of parks, open space, and habitat restoration area.

For the purpose of this analysis, it is assumed that all of the alternatives would comply with applicable federal, State, and local regulations, policies, and ordinances. The Alternatives are further described below and their potential impacts compared to those of the proposed Project.

5.4.1 Alternative 1: No Project Alternative

5.4.1.1 Description

For Alternative 1, the Area Plan would not be approved, and the land use designation on the Project site would remain Business Park and Business Development Overlay (BDO), as designated in the current City of Lake Forest General Plan (dated June 1994, revised September 2016). The Business Park designation allows for a mixture of all uses allowed under Commercial, Professional Office, and Light Industrial land use designations.^{1,2} The Business Park designation allows for a maximum FAR of 1.0:1. Alternative 1 would develop the Project site to the maximum intensity allowed under the current General Plan designation of Business Park and BDO. As such, Alternative 1 would include 1,841,700 sf of Business Park use. Because of the proximity to the Project site, it is assumed Alternative 1 would also include an Open Space & Habitat & Restoration Area along Serrano Creek.

¹ Professional office allows for single-tenant or multi-tenant offices, including legal, medical, general financial, administrative, corporate, and general business offices as well as supportive commercial uses.

² Light Industrial allows for a mixture of light industrial uses, wholesale businesses, light manufacturing and processing, storage, distribution and sales, research and development, warehousing and storage, high technology production, retail sales, and related uses.

5.4.1.2 Environmental Analysis

Aesthetics. The Project site is located in a fully developed area (with the exception of the Project site) in the northern portion of Lake Forest. Although the proposed Project would obstruct some views of the Santa Ana Mountains and some views from the Serrano Creek Trail, most views would be preserved; therefore, the proposed Project would result in less than significant impacts related to scenic vistas. The proposed Project would not impact a State Scenic Highway because none are located in the vicinity of the Project site. The visual character and quality of the Project site and its surrounding area would be preserved and enhanced through application of the architectural and landscape design guidelines outlined in the Area Plan. Therefore, the proposed Project would neither substantially degrade the visual character of the Project site nor conflict with applicable zoning and other regulations governing scenic quality, and impacts would be less than significant. The Project site is currently developed with few structures, and the majority of the Project site is not illuminated at night. The proposed Project would add lighting to the Project site that could result in impacts related to light and glare. However, the proposed Project includes mitigation measures that require preparation of a comprehensive lighting plan and a photometric survey to demonstrate that no spill lighting or glare would occur in sensitive areas. With implementation of mitigation, impacts related to light and glare would be less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would fully develop the Project site, although the use would differ from the proposed Project. Alternative 1 would likely result in similarly scaled development. Additionally, the overall visual changes to the Project site would be similar to those associated with the proposed Project because both projects would add an urban use to a site that is currently used as a nursery. Therefore, the Alternative 1 impacts to scenic vistas, degradation of the visual character of the Project site, and conflict with applicable zoning and other regulations governing scenic quality would be less than significant and similar to the proposed Project. Alternative 1 would not impact a State Scenic Highway because there are none in the vicinity of the Project site.

Alternative 1 would require nighttime lighting, similar to the proposed Project. Because Alternative 1 would introduce nighttime lighting to a Project site that is not currently illuminated at night on the majority of the site, Alternative 1 would result in potentially significant impacts related to new sources of nighttime light. The mitigation measures would be the same as the proposed Project, would require preparation of a comprehensive lighting plan and photometric survey, and would reduce potential impacts related to lighting and glare to less than significant.

In summary, Alternative 1 would result in a potentially significant impact related to nighttime lighting, which would be reduced to less than significant with mitigation. No impact to State Scenic Highways would occur. Other potential impacts related to aesthetics would be less than significant. Alternative 1 would result in a project of similar scale although the use would be different than the proposed Project and therefore would result in aesthetic impacts that are similar to the proposed Project.

Agricultural Resources. According to the California Department of Conservation (DOC), 119.2 ac of the approximately 122 ac Project site is designated as Unique Farmland. The Project site is currently

being used as a retail nursery with all products grown and/or sold in pots. The proposed Project would permanently convert 119.2 ac of Unique Farmland to a non-agricultural use, which would result in a significant and unavoidable impact. The Project site has an agricultural district zoning designation; however, the Project Applicant/Developer is seeking a zoning classification amendment. Once the zone change is approved, the future use of the Project site would be consistent with the City's zoning designation, and impacts pertaining to conflicts with existing agricultural zoning would be less than significant. The Project site is not currently under a Williamson Act contract; therefore, the proposed Project would not conflict with an existing Williamson Act contract. The proposed Project would not involve other changes in the existing environment, which due to the location or nature, could result in conversion of farmland to a non-agricultural use. Mitigation measures were considered for the proposed Project in order to reduce the significant impact of converting Unique Farmland on the Project site to non-agricultural uses; however, none of the mitigation measures were feasible in large part because there is a lack of land designated as Important Farmland in Lake Forest or Orange County that could be used to offset the agricultural land conversion impact from the proposed Project.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park land use designation. Alternative 1 would change the use on the Project site, and would convert 119.2 ac of Unique Farmland to a non-agricultural use. Impacts pertaining to conflict with existing agricultural zoning associated with Alternative 1 would be less than significant. Alternative 1 would not conflict with an existing Williamson Act contract and would not involve other changes in the existing environment that, due to the location or nature, could result in conversion of farmland to a non-agricultural use. The conversion of 119.2 ac of Unique Farmland to a non-agricultural use would result in a significant and unavoidable impact for which there are no feasible mitigation measures to address. Therefore, the agricultural impacts of Alternative 1 would be comparable to the agricultural impacts of the proposed Project. Alternative 1 would not reduce or avoid a significant unavoidable impact of the proposed Project.

Air Quality. Air quality emissions associated with construction and operation of the proposed Project would not exceed SCAQMD significance thresholds. Therefore, impacts of the proposed Project related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable national ambient air quality standards (NAAQS) or California ambient air quality standards (CAAQS) would be less than significant. The proposed Project is consistent with the SCAQMD Final 2016 Air Quality Management Plan (AQMP) because (1) the construction and operation emissions of the proposed Project would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) although the proposed Project would not be consistent with the land use designations of the Project site, the proposed Project is expected to generate less emissions as compared to the existing land use designation. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. The same grading footprint and similar construction would be required under Alternative 1 compared to the proposed Project; therefore, construction emissions would be similar and less than significant. According to the *Nakase Property Trip*

Generation Evaluation (Urban Crossroads 2018), the existing General Plan land use for the Project site would generate 14,122 more trip-ends per day than the proposed Project. The additional trip-ends would generate more operational emissions than trips associated with the proposed Project. The operational emissions of Alternative 1 were calculated as part of the *Air Quality Impact Analysis* (Urban Crossroads 2019a) and are summarized in Table 4.3.E of this EIR. Emissions generated during operation of Alternative 1 would exceed the SCAQMD thresholds for volatile organic compounds (VOCs), oxides of nitrogen (NO_x), and particulate matter less than 10 microns in size (PM₁₀). The portion of the South Coast Air Basin (Basin) in which the Project site is proposed is in nonattainment of the NAAQS for ozone (O₃) (1-hour and 8-hour), particulate matter less than 2.5 microns in size (PM_{2.5}) and is in nonattainment of the CAAQS for O₃ (1-hour and 8-hour), PM_{2.5}, and PM₁₀. As such, Alternative 1 would result in a cumulatively considerable net increase of criteria pollutants for which the region is nonattainment. Although Alternative 1 would be consistent with the land use designation of Business Park and BDO, operation of Alternative 1 would exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations. Therefore, Alternative 1 would not be consistent with the SCAQMD Final 2016 AQMP. Therefore, operational impacts of the No Project Alternative would be significant and greater than the proposed Project.

Biological Resources. No special-status plants are present on the Project site; therefore, the proposed Project would not impact special-status plant species. The proposed Project would remove 119.77 ac (115.26 ac permanently, 4.51 ac temporarily) of low-quality potential foraging habitat for two special-status bats: the western red bat and the western mastiff bat. The proposed Project would impact a small (0.28 ac) patch of Maritime Succulent Scrub/Southern Cactus Scrub (Coastal Sage Scrub) that is highly disturbed in nature and would not require mitigation because of its small size and degraded nature. While burrowing owls were not detected on the Project site during focused surveys, the proposed Project includes mitigation to ensure that the species has not moved onto the site between the dates the survey was performed and construction commences through implementation of a pre-construction survey prior to ground disturbance, per California Department of Fish and Wildlife (CDFW) survey guidelines. Bats have the potential to roost and possibly breed in Serrano Creek; therefore, mitigation would be implemented to reduce indirect impacts to bats during construction. Bat roosting/nursery exit counts and acoustic surveys would be conducted prior to the start of any construction activities, and a Bat Management Plan would be prepared, if required based on the results of the survey. Project construction has the potential to introduce and spread nonnative species; therefore, mitigation would be implemented to ensure the proposed landscaping would not include invasive exotic plants. Additionally, indirect impacts to Serrano Creek would be reduced through mitigation measures that require installation of construction fencing and implementation of Best Management Practices (BMPs). Additionally, a Habitat Management Plan (HMP) would be prepared, and the Open Space & Habitat & Restoration Area would be placed in a permanent conservation easement to avoid impacts to sensitive riparian habitat associated with Serrano Creek. The proposed Project would impact the on-site drainage that transverses the Project site and contains potential CDFW, United States Army Corps of Engineers (ACOE), and RWQCB jurisdiction. Mitigation measures for jurisdictional waters includes coordination with the ACOE, CDFW, and RWQCB regarding potential jurisdictional areas and the associated permitting processes and enhancement, and the establishment or re-establishment of jurisdictional areas on off-site conserved lands. Finally, compliance with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503 would reduce construction impacts to nesting birds,

including Cooper's hawk and red-tailed hawk in Serrano Creek. In summary, compliance with the mitigation summarized above and existing regulatory requirements (e.g., the MBTA) would reduce potentially significant impacts of the proposed Project to biological resources to less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Because Alternative 1 would involve development on the same Project site and would include an Open Space & Habitat & Restoration Area along Serrano Creek, impacts of Alternative 1 would essentially be the same as the proposed Project. Because the potential biological impacts of Alternative 1 would be comparable to those associated with the proposed Project, the same mitigation measures would be required. After implementation of mitigation, impacts to biological resources would be less than significant and comparable to the proposed Project.

Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. The proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the Project site. Due to the number of cultural resources recorded within 0.5 mi of the Project site and the location of the proposed Project site in the archaeologically sensitive Aliso Creek and Foothill areas (as identified in the City's General Plan), there is potential for ground-disturbing construction activities to impact archaeological resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and to reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts of the proposed Project to a less than significant level.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 1 would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the Project site. Because the Project site is in an area of archaeological sensitivity, there is potential that ground-disturbing construction activities would impact archaeological resources. Alternative 1 would be required to incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and to reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce the potential impacts of Alternative 1 related to cultural resources to a less than significant level.

In summary, Alternative 1 would result in no impacts to historical resources and less than significant impacts with mitigation incorporated for archaeological resources and human remains. Alternative 1 would result in comparable cultural resources impacts compared to the proposed Project because both alternatives include ground-disturbance on the Project site.

Energy. Construction of the proposed Project would require energy for activities such as the manufacture and transportation of building materials, demolition and grading activities, and building construction. Total diesel fuel consumption would be 118,339 gallons from construction truck trips. Total gasoline consumption would be 1,084,438 gallons from construction worker vehicle trips. During operation, electricity demand would be 6,140,783 kilowatt-hours (kWh) per year, and natural gas demand would be 116,020.6 therms per year compared to the existing nursery use. The proposed Project would be constructed to CALGreen standards and appliances would be energy efficient, which would help to reduce energy and natural gas consumption. The proposed Project is estimated to generate approximately 5,948,016 vehicle miles traveled (VMT) for the elementary school, 1,086,584 VMT for the retirement community, and 19,064,105 VMT for the single-family residential uses annually, which would result in annual fuel consumption of 54,189 gal of gasoline and 758 gal of diesel. Although Project construction and operation would require use of energy, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources nor would it conflict with or obstruct a State or local plan for renewable energy or energy efficiency; therefore, impacts would be less than significant.

Alternative 1 would develop the Project site with business park uses consistent with the existing Business Park and BDO land use designation. The same grading footprint and similar construction would be required under Alternative 1 compared to the proposed Project; therefore, energy use during construction would be comparable to the proposed Project. Alternative 1 would likely result in a similarly scaled project overall, and the buildings would be required to be constructed to CALGreen standards to reduce energy use. Therefore, natural gas and electricity consumption during operation would be comparable to the proposed Project. However, according to the *Nakase Property Trip Generation Evaluation* (Urban Crossroads 2018), the currently adopted General Plan land use for the Project site would generate 14,122 more trip-ends per day than the proposed Project, which would result in a greater consumption of fuel during operation.

In summary, energy demand of Alternative 1 would be comparable to the proposed Project during construction and greater than the proposed Project during operation. Although construction and operation would require using energy, and operational energy demand would be greater than the proposed Project during operation, Alternative 1 would not result in the wasteful, inefficient, or unnecessary consumption of energy resources nor would it conflict with or obstruct a State or local plan for renewable energy or energy efficiency; therefore, impacts would be less than significant.

Geology and Soils. The proposed Project would not result in any impacts related to subsidence. Potential impacts related to expansive soils would be less than significant, and no mitigation is required. Impacts related to strong seismic ground shaking, liquefaction, slope stability, lateral spreading, unsuitable soils (from settlement), and corrosive soils are considered potentially significant, and mitigation is required. The mitigation measures require compliance with the recommendations in a *Final Geotechnical Evaluation* and compliance with the California Building Code (CBC). With implementation of mitigation, the proposed buildings would be designed and constructed to current safety standards, and all potentially significant impacts related to soils and geology would be less than significant. The proposed Project would increase erosion and loss of topsoil during construction; however, Erosion Control and Sediment Control BMPs would be implemented during construction in compliance with the requirements of the Construction General

Permit to ensure that impacts related to erosion would be less than significant. The Project site is in an area previously determined as sensitive for paleontological resources; therefore, it is possible that ground-disturbing construction activities could impact significant previously undiscovered paleontological resources. A Paleontological Resources Impact Mitigation Program (PRIMP) would be prepared and implemented to reduce potentially significant impacts to paleontological resources to less than significant.

Alternative 1 would develop the Project site with business park uses consistent with the existing Business Park and BDO land use designation. The same grading footprint and similar construction would be required compared to the proposed Project. Additionally, Alternative 1 would likely result in a similarly scaled project overall as the proposed Project. The required grading and construction activities would result in the same or similar impacts related to geology and soils as the proposed Project. While some construction specifications would be different for the No Project Alternative compared to the proposed Project, the overall risks related to seismic ground shaking, erosion, slope stability, unsuitable (corrosive) soils, expansive soils, and paleontological resources would be comparable. Therefore, it is anticipated that the No Project Alternative would result in impacts related to geology and soils similar to the proposed Project, and the same mitigation measures would be required.

In summary, Alternative 1 would result in potentially significant impacts related to geology, soils, and paleontological resources. These impacts would be less than significant with implementation of mitigation measures. Alternative 1 would result in impacts related to geology, soils, and paleontological resources that would be comparable to those of the proposed Project.

Greenhouse Gas Emissions. The proposed Project would result in 4.91 MT CO₂e/SP/yr of GHG emissions in 2025 and 4.42 MT CO₂e/SP/yr in 2030. The total GHG emissions of the proposed Project would exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030; therefore, the proposed Project would result in a potential significant impact related to generation of GHG emissions. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. More than 73 percent of all mobile-source emissions in 2025 and 66 percent of all mobile-source emissions in 2030 (by weight) would be generated by the proposed Project's mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features included as part of the proposed Project. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the proposed Project's mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to generation of GHG emissions would remain significant and unavoidable.

Alternative 1 would develop the Project site with business park uses consistent with the existing Business Park and BDO land use designation. According to the *Nakase Property Trip Generation Evaluation* (Urban Crossroads 2018), the currently adopted General Plan land use for the Project site would generate 14,122 more trip-ends per day than the proposed Project, which would result in a greater GHG emissions. Therefore, Alternative 1 would result in greater GHG impacts than the proposed Project. Therefore, Alternative 1 would result in significant and unavoidable impacts

related to generation of GHG emissions. Alternative 1 would not reduce or avoid a significant unavoidable impact of the proposed Project.

Hazards and Hazardous Materials. The proposed Project may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of asbestos-containing materials (ACMs), lead-based paint, mercury, and polychlorinated biphenyls (PCBs) cannot be ruled out in the existing structure that is proposed to be demolished. Mitigation would be implemented that includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of residential and school facilities. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities, which would include a school. In order to gain approval for development of a school at the Project site that would receive State funding, previous Phase I and II Environmental Site Assessments (ESAs) prepared for the Project would need to be submitted to the Department of Toxic Substances Control (DTSC) for review. The DTSC would determine whether or not additional sampling and analysis, preparation of a Preliminary Endangerment Assessment (PEA), site remediation, and public review of reports are required in order to obtain a finding of “No Further Action”. Coordination with the DTSC is included as mitigation to reduce impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school. With implementation of the mitigation discussed above, impacts related to hazardous waste would be less than significant.

Alternative 1 would develop the Project site with business park uses consistent with the existing Business Park and BDO land use designation. Alternative 1 would not include a school, so no impact related to hazardous emissions or hazardous materials within 0.25 mi of a school would occur. Alternative 1 would involve demolition of the existing structure, grading, and construction of new buildings that would result in similar impacts related to hazardous waste and materials compared to the proposed Project. Alternative 1 may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented similar to the proposed Project, which includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of the businesses. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities. In summary, with implementation a Demolition Plan, impacts related to hazardous waste would be less than significant and comparable to that of the proposed Project.

Hydrology and Water Quality. The proposed Project would develop the Project site with a new use and would increase impervious surface area on the Project site, which would increase stormwater runoff and change the pollutants of concern in stormwater runoff. The proposed Project would implement a comprehensive Water Quality Management Plan (WQMP) and BMPs to address pollutants of concern and to ensure protection of beneficial uses of receiving waters. In addition, the proposed Project includes drainage infrastructure and BMPs to minimize development impacts to the site hydrology in compliance with hydromodification requirements. The hydrology and water quality impacts of the proposed Project would be less than significant upon compliance with existing plans, programs, and policies in place to ensure compliance with National Pollutant Discharge Elimination System (NPDES) regulations.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would change the use on the Project site, increase impervious surface area, increase stormwater runoff, and change the pollutants of concern in stormwater runoff. Alternative 1 would be required to implement BMPs and drainage infrastructure to reduce pollutants of concern on the Project site and reduce stormwater runoff in compliance with NPDES and hydromodification requirements.

With compliance with adopted regulations, Alternative 1 would result in less than significant impacts related to hydrology and water quality. The hydrology and water quality impacts of Alternative 1 would be comparable to the hydrology and water quality impacts of the proposed Project with implementation of BMPs and drainage infrastructure in compliance with adopted regulations.

Land Use and Planning. The proposed Project would be consistent with the Southern California Association of Governments (SCAG) 2008 Regional Comprehensive Plan (RCP) and Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (2016a) by siting residential uses near commercial/industrial uses and major transportation corridors and transit stops, providing new housing, and providing an open space and habitat restoration area. The proposed Project would require a General Plan Amendment to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High-Density Residential, Public Facility, Neighborhood Parks, and Open Space and a Zone Change from General Agriculture (A-1) to Planned Community. Upon the approval of the General Plan Amendment and Zone Change request by the City Council, the proposed Project would be consistent with the land use designations contained in the City's General Plan and the City's Municipal Code and zoning. The proposed Project would not result in noise, air quality, or aesthetic impacts that conflict with adjacent land uses and would not conflict with the Orange County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Impacts related to land use and planning would be less than significant, and no mitigation is required.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would be consistent with the SCAG 2008 RCP and RTP/SCS (2016a) by siting commercial uses near residential development, focusing growth near major transportation corridors and transit stops, and providing an open space and habitat restoration area. However, Alternative 1 would not meet the SCAG goal of providing new housing

opportunities. Alternative 1 would be consistent with the existing Business Park and BDO land use designation and would not require a General Plan Amendment. However, a Zone Change would be required to change the zoning from General Agriculture (A-1) to Community Commercial. Upon the approval of the Zone Change request by the City Council, Alternative 1 would be consistent with the land use designations contained in the City's Municipal Code and zoning. Alternative 1 would not result in noise, air quality, or aesthetic impacts that conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Impacts related to land use and planning would be less than significant and comparable to those of the proposed Project.

Noise. Construction noise levels would range from 53.3 to 65.2 dBA L_{eq} (equivalent continuous sound level measured in A-weighted decibels) at sensitive receiver locations. Construction vibration velocity levels are expected to range from 0.002 to 0.008 inches/second (in/sec) peak particle velocity (PPV). During operation, off-site traffic-associated trips generated from the proposed Project would increase noise levels by 0.1 to 0.72 dBA CNEL (Community Noise Equivalent Level measured in A-weighted decibels) on the study area roadway segments. Operational noise generated from the on-site uses would range from 17.9 to 32.5 dBA L_{50} (median noise level measured in A-weighted decibels) at the sensitive off-site receiver locations. The construction noise, construction vibration, off-site traffic, or on-site operational noise levels would not exceed City noise level standards or California Department of Transportation (Caltrans) construction vibration standards, and impacts would be less than significant. Operation would not generate excessive ground-borne vibration or ground-borne noise, and impacts would be less than significant. Adjacent traffic noise from nearby roadways and freeways would not exceed the City's exterior noise standards at the proposed outdoor uses on the Project site with the planned 6-foot (ft) high noise barriers, and impacts would be less than significant. Additionally, interior noise levels within the proposed residences and school, which would be constructed to meet ventilation standards and include dual-paned glass, are not anticipated to exceed the City's interior noise standards. However, a final Noise Study would be required to verify the design and building performance, which is included as mitigation to ensure interior noise levels are reduced to less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would generate similar noise levels during the construction period because the scale of the development would be similar. Alternative 1 would include business park uses and would likely not include the outdoor park uses that generate most of the operational noise for the proposed Project. Therefore, operational noise impacts at nearby sensitive receivers from on-site uses would be less than the proposed Project. Alternative 1 would generate 14,122 more vehicle trip-ends per day than the proposed Project. Therefore, Alternative 1 would result in greater off-site traffic noise compared to the proposed Project, but would be anticipated to be less than significant. Alternative 1 would not require mitigation for interior noise levels because business uses are not considered sensitive uses; therefore, a final Noise Study would not be required for Alternative 1.

In summary, Alternative 1 would result in less than significant impacts at off-site sensitive receivers. Alternative 1 would generate similar construction noise, less on-site operation noise, and greater off-site operational traffic noise compared to the proposed Project.

Population and Housing. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units, which would serve a total of approximately 2,274 residents. Because the Project site is designed as Business Park and BDO, residential uses were not envisioned on the Project site and the population increase from the proposed Project would not have been accounted for in the City's projected population growth. While the proposed Project would result in population growth, the growth attributable to the proposed Project would not be substantial in relation to the current or projected conditions in the City. The addition of new affordable housing units also supports the affordable housing goals of the City. Although the proposed Project would provide short-term construction jobs and the proposed school would employ 60 workers, up to 249 nursery employees would also be displaced. However, given the availability of jobs in the region, it is anticipated that workers would find employment elsewhere. Although the Project may contribute to a decline in the jobs-housing ratio by adding a greater number of residential units to the City than job opportunities, the overall increase in housing compared to employment is not of sufficient magnitude to negatively affect the forecasted jobs-housing ratio. The proposed Project would result in less than significant impacts related to population, housing, and employment growth.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would not include housing and would not induce substantial population growth because the majority of employees at the business park would likely already live in the region. However, Alternative 1 would not support the affordable housing goals of the City. Alternative 1 would displace the 249 nursery employees; however, Alternative 1 also would provide employment opportunities at the businesses that would occupy the business park, which would offset the displacement. Alternative 1 would increase the jobs-housing ratio by adding additional job opportunities within the City, which would help achieve the City's goal of achieving a better balance between jobs and housing.

The No Project Alternative would result in less than significant impacts related to population, housing, and employment growth. However, because Alternative 1 would not include housing and would achieve a better balance between jobs and housing, this alternative would have less impact related to population and housing than the proposed Project.

Public Services. Public service impacts related to fire and police protection services would be potentially significant; however, implementation of a Construction Traffic Management Plan (CTMP) would reduce construction impacts to less than significant, and a secured fire protection agreement and establishment of a Neighborhood Watch Program would reduce operational impacts to less than significant. The proposed Project includes the construction of a public elementary school on the Project site. The Project Applicant/Developer would include an elementary school to reduce impacts on school services from the additional students generated by the proposed Project; therefore, potential impacts related to the provision of school services for construction of the proposed Project would be less than significant. With the provision of on-site private parks and amenities, the proposed Project would not require the construction of new or an expansion of existing construction, or the expansion of existing recreational facilities or parks to maintain acceptable service ratios or performance objectives. Based on the City's library demand ratio, the population growth that would result from the proposed Project would not require the expansion of

existing library facilities in Lake Forest in order to maintain acceptable service ratios. Finally, the Orange County Transportation Authority (OCTA) would be able to provide adequate transit services to the proposed Project. Therefore, with implementation of the mitigation described above for fire and police service impacts, impacts to public services would be less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. The new business park use on the Project site would increase demand for fire and emergency medical services; however, the Orange County Fire Authority (OCFA) requires all developers to enter into a secured fire protection agreement with OCFA to ensure the availability of adequate fire protection services. Alternative 1 does not include construction of housing and therefore would not increase population within Lake Forest. Therefore, Alternative 1 would not substantially increase demand for police protection, library, park, school, or transit services.

In summary, with implementation of the mitigation described above for fire and police service impacts, impacts of Alternative 1 to public services would be less than significant. Alternative 1 would not result in additional population that would increase demand for other public services; therefore, impacts to public services would be less than the proposed Project.

Recreation. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable housing, which would increase the population in Lake Forest by approximately 2,274 persons. The increase in population would result in potentially significant impacts to existing neighborhood and regional parks and other recreational facilities. The proposed Project includes both private and public recreational uses on site. The City Municipal Code requires dedicating land equivalent to 5 ac per 1,000 residents or payment of in-lieu fees to reduce impacts to parklands. The proposed Project would meet the City's public park requirement of 11.37 ac by including approximately 21.41 ac of parks, open space, and habitat restoration area, of which 11.32 ac would be classified as public parks. Additionally, the proposed Project includes mitigation that requires on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would not include housing and would not increase the population in Lake Forest. Employees of the business park would be reasonably expected to utilize parks near their home; therefore, Alternative 1 would not substantially increase the use of existing parks in the vicinity of the Project site. Alternative 1 would therefore result in less than significant impacts to existing neighborhood and regional parks and recreational facilities. Because Alternative 1 would not increase the population in Lake Forest, impacts to park and recreational facilities would be less than that of the proposed Project.

Transportation/Traffic. The proposed Project would increase VMT to 26,098,705 from the 2,698,384 VMT generated by the existing nursery. The proposed Project would not be inconsistent with *State CEQA Guidelines* Section 15064.3(b) because the City has not established thresholds for assessing VMT impacts; therefore, traffic impacts were assessed based on level of service (LOS). The

proposed Project is anticipated to generate a total of approximately 8,789 trip-ends per day, which would contribute to an impact at the Bake Parkway/Jeronimo Road intersection that is currently operating at an unacceptable LOS. The proposed Project would mitigate the impact at this location to acceptable levels through a combination of fee payments to the City pursuant to a Fair Share Agreement or construction of specific improvements. All construction equipment would be staged on site, and mitigation would be implemented to require that large construction equipment be delivered during off-peak times to reduce travel during peak travel periods so that construction would not result in incompatible uses that increase on-road hazards. Mitigation measures also require a distance analysis to be prepared for all Project intersections to determine limited use areas (e.g., low height landscaping), on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right-in/right-out). With implementation of mitigation, project construction and operation would not result in incompatible uses that increase on-road hazards, and impacts would be reduced to less than significant. Preparation of a CTMP is required as mitigation to ensure that emergency vehicles would be able to navigate through streets adjacent to the Project site that may experience congestion due to construction activities. Impacts related to emergency access during construction would be reduced to less than significant with implementation of mitigation. The Area Plan meets or exceeds the OCFA requirements to not hinder fire and emergency access; therefore, operational impacts related to emergency access would be considered less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would generate similar traffic impacts during the construction period because the scale of the development would be similar. A CTMP would be required for Alternative 1 to reduce impacts to emergency access during construction. According to the *Traffic Impact Analysis* (Urban Crossroads 2019c) prepared for the Project, Alternative 1 would generate 14,122 more vehicle trip-ends per day than the proposed Project, which would result in greater impacts compared to the proposed Project. The No Project Alternative would mitigate traffic impacts through a Fair Share Agreement or construction of specific improvements, similar to the mitigation included for the proposed Project. Alternative 1 would be required to meet or exceed the OCFA requirements to not hinder fire and emergency access.

In summary, Alternative 1 would result in less than significant impacts related to traffic after implementation of mitigation measures similar to those of the proposed Project. Alternative 1 would result in comparable traffic impacts during construction and greater traffic impacts during operation compared to the proposed Project.

Tribal Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. No previously recorded cultural resources were identified in the Project site, and no specific information regarding tribal cultural resources was received during the Native American consultation. Therefore, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register of Historical Resources (California Register) or a local register. Based on the results of Native American consultation with the Gabrieleno Band of Mission Indians – Kizh Nation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The proposed Project would

incorporate mitigation measures to reduce potentially significant impacts to previously undiscovered significant tribal cultural resources through Native American monitoring and evaluation of archaeological resources by the Native American monitor, and reduce potentially significant impacts to Native American buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation, and would require ground-disturbing construction activities during the development. Similar to the proposed Project, Alternative 1 would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register because no previously recorded cultural resources were identified in the Project site during the records search or during the Native American consultation. Based on the results of the Native American consultation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. Alternative 1 would be required to incorporate the same mitigation measures as the proposed Project that require Native American monitoring and evaluation of archaeological resources by the Native American monitor, and compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to tribal cultural resources to a less than significant level.

In summary, Alternative 1 would result in no impacts to tribal cultural resources that are listed or eligible for listing in the California Register or a local register, and less than significant impacts with mitigation incorporated for previously undiscovered significant tribal cultural resources and Native American human remains. Alternative 1 would result in comparable tribal cultural resources impacts compared to the proposed Project because both alternatives include ground-disturbance on the Project site.

Utilities and Service Systems. Utilities and service systems include water, wastewater, electricity, natural gas, telecommunication, solid waste, and storm drain facilities. The proposed Project would increase demand for these services; however, there is sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Alternative 1 would increase demand for these services; however, it is anticipated that there would be sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant and comparable to the proposed Project.

Wildfire. The Project site is designated as a non-very high fire hazard severity zone (non-VHFHSZ) and it is not located in or near a State Responsibility Area (SRA). However, the Project site is in the vicinity of a VHFHSZ. The proposed Project would result in no impact related to installation or maintenance of infrastructure that may exacerbate fire risk. The proposed Project would result in less than significant impacts related to impairment of an adopted emergency response or

evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks.

Alternative 1 may require temporary lane closures on nearby local roadways during construction; however, these closures would be anticipated to be implemented consistent with the *California Temporary Traffic Control Handbook* (California Inter-Utility Coordinating Committee 2018). Although Alternative 1 would increase traffic trips on study area roadways, this alternative would not be expected to impair an adopted emergency response or evacuation plan because any traffic impacts would be mitigated through payment pursuant to a Fair Share Agreement or construction of specific improvements. Therefore, construction and operation of Alternative 1 would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The Project site is not located in a VHFHSZ. Despite the VHFHSZ to the northeast of the Project site, the uncontrolled spread of a wildfire in the vicinity of the Project site is unlikely due to the density of existing non-combustible development and roadways, specifically State Route 241 (SR-241) and Rancho Parkway. Due to the lack of steep slopes, prevailing winds, location, and other factors, Alternative 1 would not exacerbate wildfire risks or expose people or structures to post-fire risks.

The build out of the Project site consistent with the current land use designation would be expected to include installation of utilities and an on-site roadway network. The installation of Project-related utilities and an on-site roadway network would not exacerbate fire risk due to the Project site's location in an urban and built-out area outside of a designated fire hazard zone. Therefore, Alternative 1 would not require the installation or maintenance of associated infrastructure (e.g., roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment.

In summary, Alternative 1 would result in no impact related to installation or maintenance of infrastructure that may exacerbate fire risk and less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks. Alternative 1 would result in similar wildfire impacts compared to the proposed Project because both alternatives include development of the Project site from a nursery to an urban use.

5.4.1.3 Project Objectives

Alternative 1 would be potentially consistent with the following two project objectives:

- Provide a comprehensive plan for development of the Nakase Property that implements the goals and policies of the Lake Forest General Plan.
- Provide a site design that is sensitive to the existing natural features, including Serrano Creek.

Alternative 1 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. As such, this alternative would include construction of a business park and would not include housing or a school. Therefore, the No Project Alternative would not be consistent with the following six project objectives:

- Provide a balanced mix of single-family and attached senior affordable homes, open space, and active public and private uses.
- Accommodate public uses by incorporating a new elementary school site conveniently located within easy walking distance for Project site residents.
- Provide an exceptional trail system and on-site parks that enhance the quality of life of the larger community.
- Provide for logical, attractive, and safe pedestrian and bicycle connections within the community.
- Create high-quality residential homes and distinct, identifiable neighborhoods, with a range of specifically targeted single-family product types.
- Reduce vehicular traffic and peak-hour trips through thoughtful site planning that emphasizes connectivity, access, and mobility.

5.4.2 Alternative 2: Urban Industrial/Residential

5.4.2.1 Description

Alternative 2 assumes that the Project site would be developed in accordance with the Urban Industrial-Residential land use designation, which is a newly proposed land use designation being considered in the City's General Plan update. The Urban Industrial/Residential land use designation in the General Plan update (the Lake Forest General Plan 2040) would allow for a mix of light industrial and commercial uses, including manufacturing and production (e.g., food, beverage, apparel, design, furniture, custom, or small run manufacturing). Live-work units and home-based businesses are envisioned to be located in this designation. The intent of the Urban Industrial-Residential designation is to promote creation of a vibrant mixed-use workplace environment with employment and living opportunities located in proximity. The maximum intensity allowed under this designation is 25 residential units per acre and a maximum FAR for commercial/industrial uses of 1.0:1.

Alternative 2 would include a mix of residential and commercial/industrial uses in Planning Area 1 and a community garden in Planning Area 2. Total uses for Alternative 2 include 592 residential units, 89 senior affordable rental units, 4 ac of commercial/industrial uses, a 11.5 ac school, a 5.6 ac community garden, and 21.41 ac of parks, open space, and habitat restoration area. Table 5.A summarizes the uses assumed on the Project site for Alternative 2.

Table 5.A: Land Use Statistics for Alternative 2 (Urban Industrial/Residential)

Land Use	Planning Area	Maximum DU/ac	Acreage	Maximum # of Units
Residential	1	25	8.8	220
	2	N/A	5.6	0
	3	11.4	12.3	141
	4	10.4	13	135
	5	13.2	7.3	96
Commercial/ Industrial	1	1:1 FAR	4	174,240
School	Elementary School Site	N/A	11.5	N/A
Affordable Housing	Senior Affordable Housing	4.2 (high density)	2.6	89
Parks and Open Space	Community Garden/Farm (Planning Area 2)	N/A	5.6	N/A
	Central Park/Private Recreation Center	N/A	4.8	N/A
	Neighborhood Mini-Parks	NA	2.62	N/A
	Neighborhood Park	N/A	3.59	N/A
	Open Space & Habitat & Restoration Area	N/A	10.4	N/A
Utilitarian	Street Medians & Parkways	N/A	12.5	N/A
	Roads	N/A	22.8	N/A

Note: Grey highlighted rows show how Alternative 2 differs from the proposed Project.

DU/ac = dwelling units per acre

FAR = floor-to-area ratio

N/A = not applicable

5.4.2.2 Environmental Analysis.

Aesthetics. The Project site is located in a fully developed area (with the exception of the Project site) in the northern portion of Lake Forest. Although the proposed Project would obstruct some views of the Santa Ana Mountains and some views from the Serrano Creek Trail, most views would be preserved; therefore, the proposed Project would result in less than significant impacts related to scenic vistas. The proposed Project would not impact a State Scenic Highway because there are none in the vicinity of the Project site. The visual character and quality of the Project site and surrounding area would be preserved and enhanced through the application of the architectural and landscape design guidelines outlined in the Area Plan. Therefore, the proposed Project would not substantially degrade the visual character of the Project site or conflict with applicable zoning and other regulations governing scenic quality, and impacts would be less than significant.

The Project site is currently developed with few structures, and the majority of the Project site is not illuminated at night. The proposed Project would add lighting to the Project site, which could result in impacts related to light and glare. However, the Project includes mitigation measures that require preparation of a comprehensive lighting plan and a photometric survey to demonstrate that no spill lighting or glare would occur in sensitive areas. With implementation of mitigation, impacts related to light and glare would be less than significant.

Since Alternative 2 would result in a similarly scaled project overall, the overall visual changes to the site would be similar to those associated with the proposed Project. Therefore, the impacts of Alternative 2 to scenic vistas, degradation of the visual character of the Project site, and conflict with applicable zoning and other regulations governing scenic quality would be less than significant and similar to the proposed Project. Alternative 2 would not impact a State Scenic Highway because there are none in the vicinity of the Project site.

Alternative 2 would require nighttime lighting similar to that required for the proposed Project. Because Alternative 2 would introduce nighttime lighting to a Project site that is not currently illuminated at night over the majority of the site, Alternative 2 would result in potentially significant impacts related to new sources of nighttime light. The mitigation measures would be the same as the proposed Project, would require preparation of a comprehensive lighting plan and photometric survey, and would reduce potential impacts related to lighting and glare to less than significant.

In summary, Alternative 2 would result in a potentially significant impact related to nighttime lighting, which would be reduced to less than significant with mitigation. No impact to State Scenic Highways would occur. Other potential impacts related to aesthetics would be less than significant. Alternative 2 would result in a similar project overall and therefore would result in aesthetic impacts similar to those of the proposed Project.

Agricultural Resources. According to the DOC, 119.2 ac of the approximately 122 ac Project site is designated as Unique Farmland. The Project site is currently being used as a retail nursery with all products grown and/or sold in pots. The proposed Project would permanently convert 119.2 ac of Unique Farmland to a non-agricultural use, which would result in a significant and unavoidable impact. The Project site has an agricultural district zoning designation; however, the Project Applicant/Developer is seeking a zoning classification amendment. Once the change to the zoning designation is approved, the future use of the Project site would be consistent with the City's zoning designation, and impacts pertaining to conflicts with existing agricultural zoning would be less than significant. The Project site is not currently under a Williamson Act contract; therefore, the proposed Project would not conflict with an existing Williamson Act contract. The proposed Project would not involve other changes in the existing environment that, due to the location or nature, could result in conversion of farmland to a non-agricultural use. Mitigation measures were considered for the proposed Project in order to reduce the significant impact of converting Unique Farmland on the Project site to non-agricultural uses; however, none of the mitigation measures were feasible in large part because there is a lack of land designated as Important Farmland in Lake Forest or Orange County that could be used to offset the agricultural land conversion impact from the proposed Project.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would also include a 5.6 ac community garden. Alternative 2 would change the use of the Project site and convert 113.6 ac of Unique Farmland to a non-agricultural use while retaining 5.6 ac for gardening. Impacts pertaining to conflict with existing agricultural zoning associated with Alternative 2 would be less than significant. Alternative 2 would not conflict with an existing Williamson Act contract and would not involve other changes in the existing environment

that, due to the location or nature, could result in conversion of farmland to a non-agricultural use. In addition, Alternative 3 would retain the agricultural character on a portion of the Project site in recognition that the Project site has been in agricultural production since 1938 and is a large percentage of the City's remaining agricultural land. Alternative 2 would convert fewer acres of Unique Farmland than the proposed Project. However, the reduction in agricultural conversion amounts to approximately 5 percent of the Unique Farmland converted by the proposed Project. This reduction is not sufficient to reduce significant and unavoidable impacts associated with converting agricultural land to non-agricultural use to a less than significant impact.¹ There are no feasible mitigation measures to address the conversion of 113.6 ac of Unique Farmland to a non-agricultural use and thereby reduce the significant impacts to agricultural resources. Therefore, the agricultural impacts of Alternative 2 would be comparable to the agricultural impacts of the proposed Project.

Air Quality. Air quality emissions associated with construction and operation of the proposed Project would not exceed SCAQMD significance thresholds. Therefore, impacts of the proposed Project related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable NAAQS or CAAQS would be less than significant. The proposed Project is consistent with the SCAQMD Final 2016 AQMP because: (1) the construction and operation emissions of the proposed Project would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) although the proposed Project would not be consistent with the land use designations of the Project site, the proposed Project is expected to generate a net decrease in emissions as compared to the currently adopted land use designation. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant.

Alternative 2 would include a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would include 592 residential units, 89 senior affordable rental units, and 4 ac of commercial/industrial uses. The same grading footprint and similar construction would be required for Alternative 2 as would be for the proposed Project; therefore, construction emissions would be similar to the proposed Project and less than significant. Alternative 2 would include fewer housing units but additional acres of commercial/industrial uses that would be anticipated to generate an amount of vehicle trips similar to the proposed Project. Therefore, emissions generated during operation of Alternative 2 would not be anticipated to exceed the SCAQMD thresholds, and Alternative 2 would not result in a cumulatively considerable net increase of criteria pollutants for which the Project region is nonattainment. The proposed Project would be consistent with the SCAQMD Final 2016 AQMP because: (1) the construction and operation emissions would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) Alternative 2 would be consistent with the land use designations of the Project site once the General Plan update is approved. Therefore, impacts related to conflict or obstruction of implementation of

¹ The California Department of Conservation has indicated that the Project site would lose its Important Farmland designation if the remaining agricultural use is less than 10 ac (e-mail communication with Troy Dick, Research Analyst II, California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program, July 19, 2019).

the applicable air quality plan would be less than significant. For these reasons, the Alternative 2 air quality impacts would be less than significant and similar to the proposed Project.

Biological Resources. No special-status plants are present on the Project site; therefore, the proposed Project would not impact special-status plant species. The proposed Project would remove 119.77 ac (115.26 ac permanently, 4.51 ac temporarily) of low-quality potential foraging habitat for two special-status bats: the western red bat and the western mastiff bat. The proposed Project would impact a small patch (0.28 ac) of Maritime Succulent Scrub/Southern Cactus Scrub (Coastal Sage Scrub) that is highly disturbed in nature and would not require mitigation because of its small size and degraded nature. While burrowing owls were not detected on the Project site during focused surveys, the Project includes mitigation to ensure the species has not moved onto the site between the dates the survey was performed and construction commences through a pre-construction survey prior to ground disturbance, per CDFW survey guidelines. Bats have the potential to roost and possibly breed in Serrano Creek; therefore, mitigation would be implemented to reduce indirect impacts to bats during construction. Bat roosting/nursery exit counts and acoustic surveys would be conducted prior to the start of any construction activities, and a Bat Management Plan would be prepared, if required, based on the results of the survey. Project construction has the potential to introduce and spread nonnative species; therefore, mitigation would be implemented to ensure that the proposed landscaping would not include invasive exotic plants. Additionally, indirect impacts to Serrano Creek would be reduced through mitigation measures that require installation of construction fencing and implementation of BMPs. Additionally, an HMP would be prepared and the Open Space & Habitat & Restoration Area placed in a permanent conservation easement to avoid impacts to sensitive riparian habitat associated with Serrano Creek. The proposed Project would impact the on-site drainage that transverses the Project site and contains potential CDFW, ACOE, and RWQCB jurisdiction. Mitigation measures for jurisdictional waters include coordination with ACOE, CDFW, and RWQCB regarding potential jurisdictional areas and the associated permitting processes and enhancement, re-establishment, or establishment of jurisdictional areas on off-site conserved lands. Finally, compliance with the MBTA and California Fish and Game Code Section 3503 would reduce construction impacts to nesting birds, including Cooper's hawk and red-tailed hawk, in Serrano Creek. In summary, compliance with the mitigation summarized above and existing regulatory requirements such as the MBTA would reduce potentially significant impacts to biological resources to less than significant.

Alternative 2 would develop the Project site with business park use consistent with the existing Business Park and BDO land use designation. Because Alternative 2 would involve development on the same Project site and would include an Open Space & Habitat & Restoration Area along Serrano Creek, Alternative 2 impacts would be essentially the same as the proposed Project. Because the potential biological impacts of Alternative 2 would be comparable to those associated with the proposed Project, the same mitigation measures would be required. After implementation of mitigation, Alternative 2 impacts to biological resources would be less than significant and comparable to the proposed Project.

Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. The proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously

recorded historical resources were identified in the Project site. Due to the number of cultural resources recorded within 0.5 mi of the Project site and the location of the proposed Project site in the archaeologically sensitive Aliso Creek and Foothill areas (as identified in the City's General Plan), there is potential that ground-disturbing construction activities would impact archaeological resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 2 would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the Project site. Because the Project site is in an area of archaeological sensitivity, there is potential that ground-disturbing construction activities would impact archaeological resources. Alternative 2 would be required to incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to cultural resources to a less than significant level.

In summary, Alternative 2 would result in no impacts to historical resources and less than significant impacts with mitigation incorporated for archaeological resources and human remains. Alternative 2 would result in cultural resources impacts comparable to those of the proposed Project because both alternatives include ground disturbance on the Project site.

Energy. Construction of the proposed Project would require energy for activities such as the manufacture and transportation of building materials, demolition and grading activities, and building construction. Total diesel fuel consumption would be 118,339 gal from construction truck trips. Total gasoline consumption would be 1,084,438 gal from construction worker vehicle trips. During operation, electricity demand would be 6,140,783 kWh per year, and natural gas demand would be 116,020.6 therms per year compared to the existing nursery use. The proposed Project would be constructed to CALGreen standards and appliances would be energy efficient, which would help to reduce energy and natural gas consumption. The proposed Project is estimated to generate approximately 5,948,016 VMT for the elementary school, 1,086,584 VMT for the retirement community, and 19,064,105 VMT for the single-family residential uses annually, which would result in an annual fuel consumption of 54,189 gal of gasoline and 758 gal of diesel. Although Project construction and operation would require the use of energy, the proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

Alternative 2 would include a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update.

Alternative 2 would include 592 residential units, 89 senior affordable rental units, and 4 ac of commercial/industrial uses. The same grading footprint and similar construction would be required for Alternative 2 as would the proposed Project; therefore, energy use during construction would be comparable to the proposed Project. Alternative 2 would likely result in a similarly scaled project overall, and the building would be required to be constructed to CALGreen standards to reduce energy use. Alternative 2 would include fewer housing units but additional acres of commercial/industrial uses that would be anticipated to generate a similar amount of vehicle trips as the proposed Project. Therefore, energy use during operation would be comparable to the proposed Project. Although construction and operation would require the use of energy, the operational energy demand would be similar to that of the proposed Project and would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, Alternative 2 impacts related to energy use would be less than significant.

Geology and Soils. The proposed Project would not result in any impacts related to subsidence. Potential impacts related to expansive soils would be less than significant, and no mitigation is required. Impacts related to strong seismic ground shaking, liquefaction, slope stability, lateral spreading, unsuitable soils (from settlement), and corrosive soils are considered potentially significant, and mitigation is required. The mitigation measures require compliance with the recommendations in the *Final Geotechnical Evaluation* and compliance with the CBC. With implementation of mitigation, the proposed buildings would be designed and constructed to current safety standards, and all potentially significant impacts related to soils and geology would be less than significant. The proposed Project would increase erosion and loss of topsoil during construction; however, Erosion Control and Sediment Control BMPs would be implemented during construction in compliance with the requirements of the Construction General Permit to ensure that impacts related to erosion would be less than significant. The Project site is in an area previously determined as sensitive for paleontological resources; therefore, it is possible that ground-disturbing construction activities could impact significant previously undiscovered paleontological resources. A PRIMP would be prepared and implemented to reduce potentially significant impacts to paleontological resources to less than significant.

Alternative 2 would include a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. The same or similar grading footprint and similar construction as the Proposed Project would be required. Additionally, Alternative 2 would likely result in a similarly scaled project overall as the proposed Project. The required grading and construction activities would result in the same or similar impacts related to geology and soils as the proposed Project. While some construction specifications would be different for Alternative 2 when compared to the proposed Project, the overall risks related to seismic ground shaking, erosion, slope stability, unsuitable (corrosive) soils, expansive soils, and paleontological resources would be comparable. Therefore, it is anticipated that Alternative 2 would result in similar impacts related to geology and soils as the proposed Project, and the same mitigation measures would be required.

In summary, Alternative 2 would result in potentially significant impacts related to geology and soils. These impacts would be less than significant with implementation of mitigation measures. Alternative 2 would result in impacts related to geology and soils that would be comparable to those of the proposed Project.

Greenhouse Gas Emissions. The proposed Project would result in 4.91 MT CO₂e/SP/yr of GHG emissions in 2025 and 4.42 MT CO₂e/SP/yr in 2030. The total GHG emissions of the proposed Project would exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030; therefore, the proposed Project would result in a potentially significant impact related to GHG emissions generation. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. More than 73 percent of all mobile-source emissions in 2025 and 66 percent of all mobile-source emissions in 2030 (by weight) would be generated by the proposed Project's mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features included as part of the proposed Project. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the proposed Projects mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to the generation of GHG emissions would remain significant and unavoidable.

Alternative 2 would include a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would include fewer housing units but additional acres of commercial/industrial uses that would be anticipated to generate a similar amount of vehicle trips as the proposed Project. Emissions would likely be similar to the proposed Project. Therefore, the total GHG emissions of Alternative 2 would likely exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030; therefore, Alternative 2 would result in a potentially significant impact related to GHG emissions generation. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. A majority of the GHG emissions would be generated by the mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features that would be included in Alternative 2. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, Alternative 2's mobile-source emissions alone would likely still exceed the threshold of significance. Therefore, Alternative 2 impacts related to the generation of GHG emissions would remain significant and unavoidable but similar to that of the proposed Project.

Hazards and Hazardous Materials. The proposed Project may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented that includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve transport, use, and disposal of small

quantities of hazardous materials or wastes associated with routine maintenance of residential and school facilities. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities. The proposed Project would include a school. In order to gain approval for development of a school at the Project site that would receive State funding, previous Phase I and II ESAs prepared for the Project would need to be submitted to the DTSC for review. The DTSC would determine whether or not additional sampling and analysis, preparation of a PEA, site remediation, and public review of reports are required in order to obtain a finding of “No Further Action”. Coordination with DTSC is included as mitigation to reduce impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school. With implementation of the mitigation measures discussed above, impacts related to hazardous waste would be less than significant.

Alternative 2 would include a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would involve demolition of the existing structure, grading, and construction of new buildings that would result in similar impacts related to hazardous waste and materials as the proposed Project. Alternative 2 may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented similar to the proposed Project, which includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of the residents, businesses, and school. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities. Alternative 2 would include a school, and impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school could occur; therefore, a finding of “No Further Action” would be required from the DTSC. With implementation a Demolition Plan and a finding of “No Further Action”, impacts related to hazardous waste would be less than significant and comparable to that of the proposed Project.

Hydrology and Water Quality. The proposed Project would develop the Project site with a new use and would increase the impervious surface area on the Project site, which would increase stormwater runoff and change the pollutants of concern in stormwater runoff. The proposed Project would implement a comprehensive WQMP and BMPs to address pollutants of concern and to ensure protection of beneficial uses of receiving waters. In addition, the proposed Project includes drainage infrastructure and BMPs to minimize development impacts to the site hydrology in compliance with hydromodification requirements. Hydrology and water quality impacts of the proposed Project would be less than significant upon compliance with existing plans, programs, and policies in place to ensure compliance with NPDES regulations.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan

update. Alternative 2 would change the use on the Project site, increase impervious surface area, increase stormwater runoff, and change the pollutants of concern in stormwater runoff. Alternative 2 would be required to implement BMPs and drainage infrastructure to reduce pollutants of concern on the project site and reduce stormwater runoff in compliance with NPDES and hydromodification requirements.

With compliance with adopted regulations, Alternative 2 would result in less than significant impacts related to hydrology and water quality. With implementation of BMPs and drainage infrastructure in compliance with adopted regulations, the hydrology and water quality impacts of Alternative 2 would be comparable to that of the proposed Project.

Land Use and Planning. The proposed Project would be consistent with the SCAG 2008 RCP and RTP/SCS by siting residential uses near commercial/industrial uses, near major transportation corridors and transit stops, providing new housing, and providing an open space and habitat restoration area. The proposed Project would require a General Plan Amendment to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High Density Residential, Public Facility, Neighborhood Parks, and Open Space, and a Zone Change from General Agriculture (A-1) to Planned Community. Upon the approval of the General Plan Amendment and Zone Change request by the City Council, the proposed Project would be consistent with the land use designations contained in the City's General Plan and the City's Municipal Code and zoning. The proposed Project would not result in noise, air quality, or aesthetic impacts that would conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Impacts related to land use and planning would be less than significant, and no mitigation is required.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would be consistent with the SCAG 2008 RCP and RTP/SCS by siting commercial uses near residential development, providing new housing opportunities that focus growth near major transportation corridors and transit stops, and providing an open space and habitat restoration area. Alternative 2 would be consistent with the Urban Industrial/Residential land use designation when the General Plan Update is approved in 2020 and would not require a General Plan Amendment. However, a Zone Change would be required to change the zoning from General Agriculture (A-1) to Low-Medium and Medium Density Residential, High Density Residential, Public Facility, Neighborhood Parks, Open Space, and Community Commercial. Upon the approval of the Zone Change request by the City Council, Alternative 2 would be consistent with the land use designations contained in the City's Municipal Code and zoning. Alternative 2 would not result in noise, air quality, or aesthetic impacts that would conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Impacts related to land use and planning would be less than significant and comparable to those of the proposed Project.

Noise. Construction noise levels would range from 53.3 to 65.2 dBA L_{eq} at the sensitive receiver locations. Construction vibration velocity levels are expected to range from 0.002 to 0.008 in/sec PPV. During operation, off-site traffic-associated trips generated from the proposed Project would increase noise levels by 0.1 to 0.72 dBA CNEL on the study area roadway segments. Operational

noise generated from the on-site uses would range from 17.9 to 32.5 dBA L₅₀ at the sensitive off-site receiver locations. The construction noise, construction vibration, off-site traffic, on on-site operational noise levels would not exceed City noise level standards or Caltrans construction vibration standards, and impacts would be less than significant. Operation would not generate excessive ground-borne vibration or ground-borne noise, and impacts would be less than significant. Adjacent traffic noise from nearby roadways and freeways would not exceed the City's exterior noise standards at the proposed outdoor uses on the Project site with the planned 6 ft high noise barriers, and impacts would be less than significant. Additionally, interior noise levels within the proposed residences and school, which would be constructed to meet ventilation standards and include dual-paned glass, are not anticipated to exceed the City's interior noise standards. However, a final Noise Study would be required to verify the design and building performance, which is included as mitigation to ensure that interior noise levels are reduced to less than significant.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would generate similar noise levels during the construction period because the scale of the development would be similar. Alternative 2 would include fewer housing units but additional acres of commercial/industrial uses that would be anticipated to generate a similar amount of vehicle trips as the proposed Project. Therefore, Alternative 2 would generate similar operational noise levels as the proposed Project. It is not anticipated that any heavy landscaping or farming equipment would be used in the community garden; therefore, this use would not generate excessive noise. Therefore, similar to the proposed Project, a final Noise Study would be required to demonstrate that the interior noise levels within the proposed buildings would be less than the City's interior noise.

In summary, Alternative 2 would result in less than significant impacts at off-site sensitive receivers. On-site noise levels would be less than significant after mitigation (i.e., preparation of a final Noise Study). Alternative 2 would generate construction and operational noise similar to that of the proposed Project.

Population and Housing. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units that would serve approximately 2,274 residents. Because the Project site is designed as Business Park and BDO, residential uses were not envisioned on the Project site and the population increase from the proposed Project would not have been accounted for in the City's projected population growth. While the proposed Project would result in population growth, the growth attributable to the proposed Project would not be substantial in relation to the current or projected conditions in Lake Forest. The addition of new affordable housing units also supports the affordable housing goals of the City. Although the proposed Project would provide short-term construction jobs and the proposed school would employ 60 workers, up to 249 nursery employees would also be displaced. However, given the availability of jobs in the region, it is anticipated that workers would find employment elsewhere. Although the Project may contribute to a decline in the jobs-housing ratio by adding a greater number of residential units to the City than job opportunities, the overall increase in housing compared to employment is not of a sufficient magnitude to negatively affect the forecasted jobs-

housing ratio. The proposed Project would result in less than significant impacts related to population, housing, and employment growth.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Although Alternative 2 would include fewer housing units and serve fewer residents than the proposed Project, the increased population of 1,996 persons resulting from the alternative would not have been accounted for in the City's projected population. While Alternative 2 would result in population growth, the growth attributable to the alternative would not be substantial in relation to the current or projected conditions in Lake Forest. Additionally, Alternative 2 would support the affordable housing goals of the City by providing senior affordable housing. Alternative 2 would displace the 249 nursery employees; however, Alternative 2 would also provide short-term construction jobs, and the proposed school and commercial/industrial uses would employ workers. Alternative 2 may contribute to a decline in the jobs-housing ratio by adding a greater number of residential units to the City than job opportunities. However, because Alternative 2 includes fewer residential units and more job opportunities than the proposed Project, the decline in the jobs-housing ratio would be less than that of the proposed Project.

In summary, Alternative 2 would result in less than significant impacts related to population, housing, and employment growth. However, because Alternative 2 would include fewer housing units and more job opportunities than the proposed Project, it would result in less of a decline in the balance between jobs and housing. Therefore, Alternative 2 would have a reduced impact related to population and housing when compared to the proposed Project.

Public Services. Public service impacts related to fire and police protection services would be potentially significant; however, implementation of a CTMP would reduce construction impacts to less than significant, and a secured fire protection agreement and establishment of a Neighborhood Watch Program would reduce operational impacts to less than significant. The proposed Project includes the construction of a public elementary school on the Project site, and the Project Applicant/Developer would include an elementary school to reduce impacts on school services from the additional students generated by the proposed Project. Therefore, potential impacts related to the provision of school services for construction of the proposed Project would be less than significant. With the provision of on-site private parks and amenities, the proposed Project would not require constructing new or expanding existing construction, or expanding existing recreational facilities or parks to maintain acceptable service ratios or performance objectives. Based on the City's library demand ratio, the population growth that would result from the proposed Project would not require expanding existing library facilities in Lake Forest in order to maintain acceptable service ratios. Finally, OCTA would be able to provide adequate transit services to the proposed Project. Therefore, with implementation of the mitigation described above for fire and police service impacts, impacts to public services would be less than significant.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would include fewer housing units and would result in less population growth than the proposed Project. The increased population from Alternative 2 would increase demand for

fire and emergency medical services, police protection, library, park, school, and transit services, although the increased demand would be less than the proposed Project. Alternative 2 would include mitigation similar to that of the proposed Project, including implementation of a CTMP, establishment of a Neighborhood Watch Program, and payment of development fees. Additionally Alternative 2 would include a school, parks, and open space to reduce demand for schools and parks. Therefore, with implementation of mitigation, impacts to public services would be less than significant.

In summary, with implementation of the mitigation described above, Alternative 2 impacts to public services would be less than significant. Alternative 2 would result in less of an increase in population; therefore, impacts to public services would be less than the proposed Project.

Recreation. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable housing that would increase the population in Lake Forest by approximately 2,274 persons. The increase in population would result in potentially significant impacts to existing neighborhood and regional parks and other recreational facilities. The proposed Project includes both private and public recreational uses on site. The City Municipal Code requires dedication of land equivalent to 5 ac per 1,000 residents or payment of in-lieu fees to reduce impacts to parklands. The proposed Project would meet the City's public park requirement of 11.37 ac by including approximately 21.41 ac of parks, open space, and habitat restoration area, of which 11.32 ac would be classified as public parks. Additionally, the proposed Project includes mitigation that requires on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would increase the population within the City by 1,996 persons, which is a public park requirement of 9.98 ac using the City's standard of 5 ac of recreational space per 1,000 residents. Alternative 2 would include 21.41 ac of parks, open space, and habitat restoration area, of which 11.32 ac would be classified as public parks. Alternative 2 would include mitigation similar to the proposed Project, which would require on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation. Alternative 2 would result in impacts to parks and recreational facilities comparable to those of the proposed Project because both alternatives would offset impacts by dedicating parkland through construction of on-site parks.

Transportation/Traffic. The proposed Project would increase VMT to 26,098,705 from the 2,698,384 VMT generated by the existing nursery. The proposed Project would not be inconsistent with *State CEQA Guidelines* Section 15064.3(b) because the City has not established thresholds for assessing VMT impacts; therefore, traffic impacts were assessed based on LOS. The proposed Project is anticipated to generate a total of approximately 8,789 trip-ends per day, which would contribute to an impact at the Bake Parkway/Jeronimo Road intersection, which is currently operating at an unacceptable LOS. The proposed Project would mitigate the impact at this location to acceptable levels through a combination of fee payments to the City pursuant to a Fair Share

Agreement or construction of the specific improvements. All construction equipment would be staged on site, and mitigation would be implemented to require that large construction equipment be delivered during off-peak times to reduce travel during peak travel periods so that construction would not result in incompatible uses that increase on-road hazards. Mitigation measures also require a distance analysis to be prepared for all Project intersections to determine limited use areas (e.g., low height landscaping), and on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right in/right-out). With implementation of mitigation, project construction and operation would not result in incompatible uses that increase on-road hazards, and impacts would be reduced to less than significant. Preparation of a CTMP is required as mitigation to ensure emergency vehicles would be able to navigate to the Project site through adjacent streets that may experience congestion due to construction activities. Impacts related to emergency access during construction would be reduced to less than significant with implementation of mitigation. The Area Plan meets or exceeds OCFA requirements to not hinder fire and emergency access; therefore, operational impacts related to emergency access would be considered less than significant.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would generate similar traffic impacts during the construction period because the scale of the development would be similar. A CTMP would be required for Alternative 2 to reduce impacts to emergency access during construction. Alternative 2 would include fewer housing units but additional acres of commercial/industrial uses, which would be anticipated to generate a similar amount of vehicle trips as the proposed Project. Therefore, traffic impacts would be similar compared to the proposed Project. Alternative 2 would mitigate traffic impacts through a Fair Share Agreement or construction of specific improvements, similar to the mitigation included for the proposed Project. Alternative 2 would be required to meet or exceed OCFA requirements to not hinder fire and emergency access.

In summary, Alternative 2 would result in less than significant impacts related to traffic after implementation of mitigation measures similar to those of the proposed Project. Alternative 2 would result in comparable traffic impacts during construction and operation compared to the proposed Project.

Tribal Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. No previously recorded cultural resources were identified in the Project site and no specific information regarding tribal cultural resources was received during the Native American consultation. Therefore, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register. Based on the results of Native American consultation with the Gabrieleno Band of Mission Indians – Kizh Nation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to previously undiscovered significant tribal cultural resources through Native American monitoring and evaluation of archaeological resources by the Native American monitor, and reduce potentially significant impacts to Native American buried human

remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 2 would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register because no previously recorded cultural resources were identified in the Project site during the records search or during the Native American consultation. Based on the results of Native American consultation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. Alternative 2 would be required to incorporate the same mitigation measures as the proposed Project that require Native American monitoring and evaluation of archaeological resources by the Native American monitor, and compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to tribal cultural resources to a less than significant level.

In summary, Alternative 2 would result in no impacts to tribal cultural resources that are listed or eligible for listing in the California Register or a local register, and less than significant impacts with mitigation incorporated for previously undiscovered significant tribal cultural resources and Native American human remains. Alternative 2 would result in comparable tribal cultural resources impacts compared to the proposed Project because both alternatives include ground disturbance on the Project site.

Utilities and Service Systems. Utilities and service systems include water, wastewater, electricity, natural gas, telecommunication, solid waste, and storm drain facilities. The proposed Project would increase demand for these services; however, there are sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant.

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would increase demand for these services; however, it is anticipated that there would be sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant and comparable to the proposed Project.

Wildfire. The Project site is designated as a non-VHFHSZ and is not located in or near an SRA. However, the Project site is in the vicinity of a VHFHSZ. The proposed Project would result in no impact related to installation or maintenance of infrastructure that may exacerbate fire risk. The proposed Project would result in less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks.

Alternative 2 may require temporary lane closures on nearby local roadways during construction; however, these closures would be anticipated to be implemented consistent with the *California Temporary Traffic Control Handbook* (California Inter-Utility Coordinating Committee 2018). Study area intersections would be expected to either operate at acceptable LOS if the Project site was developed consistent with the Urban Industrial/Residential land use designation, or the Project would be required to mitigate for any intersection impacts. Therefore, construction and operation of Alternative 2 would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The Project site is not located in a VHFHSZ. Despite the VHFHSZ to the northeast of the Project site, the uncontrolled spread of wildfire in the vicinity of the Project site is unlikely due to the density of existing non-combustible development and roadways, specifically SR-241 and Rancho Parkway. Due to the lack of steep slopes, prevailing winds, location, and other factors, Alternative 2 would not exacerbate wildfire risks or expose people or structures to post-fire risks.

Build out of the Project site consistent with the Urban Industrial/Residential land use designation would be expected to include installation of utilities and an on-site roadway network. The installation of Project-related utilities and an on-site roadway network would not exacerbate fire risk due to the Project site's location in an urban and built-out area outside of a designated fire hazard zone. Therefore, Alternative 2 would not require the installation or maintenance of associated infrastructure (e.g., roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment.

In summary, Alternative 2 would result in no impact related to installation or maintenance of infrastructure that may exacerbate fire risk and less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks. Alternative 2 would result in similar wildfire impacts compared to the proposed Project because both alternatives include development of the Project site from a nursery to an urban use.

5.4.2.3 Project Objectives

Alternative 2 would develop the Project site with a mix of residential and commercial/industrial uses consistent with the proposed Urban Industrial/Residential land use designation in the General Plan update. Alternative 2 would include fewer housing units but also additional acres of commercial/industrial uses compared to the proposed Project. Alternative 2 would be potentially consistent with all of the Project objectives, which include:

- Provide a comprehensive plan for development of the Nakase Property, which implements the goals and policies of the Lake Forest General Plan.
- Provide a site design that is sensitive to the existing natural features, including Serrano Creek.
- Reduce vehicular traffic and peak-hour trips through thoughtful site planning that emphasizes connectivity, access, and mobility.

- Provide a balanced mix of single-family and attached senior affordable homes, open space, and active public and private uses.
- Accommodate public uses by incorporating a new elementary school site conveniently located within easy walking distance for Project site residents.
- Provide an exceptional trail system and on-site parks that enhance the quality of life of the larger community.
- Provide for logical, attractive, and safe pedestrian and bicycle connections within the community.
- Create high-quality residential homes and distinct, identifiable neighborhoods with a range of specifically targeted single-family product types.

5.4.3 Alternative 3: No School Alternative

5.4.3.1 Description

Alternative 3 would be similar to the proposed Project, but without a school and with a community garden. Alternative 3 would include development of up to 675 single-family residential units, 101 senior affordable rental units, a 3.5 ac community garden, and 21.41 ac of parks, open space, and habitat restoration area. Alternative 3 would not include the school that is included in the proposed Project. Instead, Planning Area 2 would be expanded to encompass the school site and would include residential uses as well as a 3.5 ac community garden. Table 5.B summarizes the uses assumed on the Project site for Alternative 3.

Table 5.B: Land Use Statistics for Alternative 3 (No School)

Land Use	Planning Area	Maximum DU/ac	Acreage	Maximum # of Units ¹
Residential	1	14.2	12.8	182
	2	21.6	13.6	294
	3	11.4	12.3	141
	4	10.4	13	135
	5	13.2	7.3	96
School	Elementary School Site	N/A	0	N/A
Affordable Housing	Senior Affordable Housing	38.9 (high density)	2.6	101
Parks and Open Space	Community Garden/Farm (Planning Area 2)	N/A	3.5	N/A
	Central Park/Private Recreation Center	N/A	4.8	N/A
	Neighborhood Mini-Parks	N/A	2.62	N/A
	Neighborhood Park	N/A	3.59	N/A
	Open Space & Habitat & Restoration Area	N/A	10.4	N/A
Utilitarian	Street Medians & Parkways	N/A	12.5	N/A
	Roads	N/A	22.8	N/A

Note: Grey highlighted rows show how Alternative 3 differs from the proposed Project.

¹ Although the total number of residential units in Planning Areas 1-5 exceed 675 based on allowable density, the total development would be capped at 675 residential units and 101 senior affordable housing units.

DU/ac = dwelling units per acre

N/A = not applicable

5.4.3.2 Environmental Analysis

Aesthetics. The Project site is located in a fully developed area (with the exception of the Project site) in the northern portion of Lake Forest. Although the proposed Project would obstruct some views of the Santa Ana Mountains and some views from the Serrano Creek Trail, most views would be preserved; therefore, the proposed Project would result in less than significant impacts related to scenic vistas. The proposed Project would not impact a State Scenic Highway because none are located in the vicinity of the Project site. The visual character and quality of the Project site and the surrounding area would be preserved and enhanced through the application of the architectural and landscape design guidelines outlined in the Area Plan. Therefore, the proposed Project would not substantially degrade the visual character of the Project site nor conflict with applicable zoning and other regulations governing scenic quality and impacts would be less than significant. The Project site is currently developed with few structures, and the majority of the Project site is not illuminated at night. The proposed Project would add lighting to the Project site that could result in impacts related to light and glare. However, the Project includes mitigation measures that require preparation of a comprehensive lighting plan and a photometric survey to demonstrate that no spill lighting or glare would occur in sensitive areas. With implementation of mitigation, impacts related to light and glare would be less than significant.

Since Alternative 3 would result in a similarly scaled project overall, the overall visual changes to the site would be similar to those associated with the proposed Project. Therefore, the impacts of Alternative 3 to scenic vistas, degradation of the visual character of the Project site, and conflict with applicable zoning and other regulations governing scenic quality would be less than significant and similar to the proposed Project. Alternative 3 would not impact a State Scenic Highway because there are none in the vicinity of the Project site.

Alternative 3 would require nighttime lighting similar to that of the proposed Project. Because Alternative 3 would introduce nighttime lighting to a Project site that is not currently illuminated at night on the majority of the site, the alternative would result in potentially significant impacts related to new sources of nighttime light. The mitigation measures would be the same as the proposed Project, would require preparation of a comprehensive lighting plan and photometric survey, and would reduce potential impacts related to lighting and glare to less than significant.

In summary, Alternative 3 would result in a potentially significant impact related to nighttime lighting that would be reduced to less than significant with mitigation. No impact to State Scenic Highways would occur. Other potential impacts related to aesthetics would be less than significant. Alternative 3 would result in a similar project overall and therefore would result in aesthetic impacts similar to that of the proposed Project.

Agricultural Resources. According to the DOC, 119.2 ac of the approximately 122 ac Project site is designated as Unique Farmland. The Project site is currently being used as a retail nursery with all products grown and/or sold in pots. The proposed Project would permanently convert 119.2 ac of Unique Farmland to a non-agricultural use, which would result in a significant and unavoidable impact. The Project site has an agricultural district zoning designation; however, the Project Applicant/Developer is seeking a zoning classification amendment and once the zone change is approved, the future use of the Project site would be consistent with the City's zoning designation

and impacts pertaining to conflicts with existing agricultural zoning would be less than significant. The Project site is not currently under a Williamson Act contract; therefore, the proposed Project would not conflict with an existing Williamson Act contract. The proposed Project would not involve other changes in the existing environment that, due to the location or nature, could result in the conversion of Unique Farmland to a non-agricultural use. Mitigation measures were considered for the proposed Project in order to reduce the significant impact of converting Unique Farmland on the Project site to non-agricultural uses; however, none of the mitigation measures were feasible in large part due to a lack of Important Farmland within the City or County that could be used to offset the agricultural land conversion impact from the proposed Project.

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses as well as a 3.5 ac community garden. Alternative 3 would change the use on the Project site and would convert 117.2 ac of Unique Farmland to a non-agricultural use while retaining 3.5 ac for gardening. Impacts pertaining to conflict with existing agricultural zoning associated with Alternative 3 would be less than significant. Alternative 3 would not conflict with an existing Williamson Act contract and would not involve other changes in the existing environment that, due to the location or nature, could result in conversion of Unique Farmland to a non-agricultural use. Alternative 3 would convert 2 fewer acres of Unique Farmland than the proposed Project. In addition, Alternative 3 would retain the agricultural character on a portion of the Project site in recognition that the Project site has been in agricultural production since 1938 and is a large percentage of the City's remaining agricultural land. However, the reduction in agricultural conversion amounts to approximately 2 percent of the Unique Farmland converted by the proposed Project. This reduction is not sufficient to reduce the significant and unavoidable impacts associated with the conversion of agricultural land to a non-agricultural use to less than significant.¹ There are no feasible mitigation measures to address the conversion of 117.2 ac of Unique Farmland to a non-agricultural use and thereby reduce the significant impacts to agricultural resources. Therefore, the agricultural impacts of Alternative 3 would be comparable to the agricultural impacts of the proposed Project.

Air Quality. Air quality emissions associated with construction and operation of the proposed Project would not exceed SCAQMD significance thresholds. Therefore, impacts of the proposed Project related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable NAAQS or CAAQS would be less than significant. The proposed Project is consistent with the SCAQMD Final 2016 AQMP because: (1) the construction and operation emissions of the proposed Project would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) although the proposed Project would not be consistent with the land use designations of the Project site, the proposed Project is expected to generate a net decrease in emissions as compared to the currently adopted land use designation. Therefore, impacts related to a conflict or obstruction of implementation of the applicable air quality plan would be less than significant.

¹ The California Department of Conservation has indicated that the Project site would lose its Important Farmland designation if the remaining agricultural use is less than 10 ac (e-mail communication with Troy Dick, Research Analyst II, California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program, July 19, 2019).

Alternative 3 would include the same amount of residential development as the proposed Project but would not include a school. A similar grading footprint but less construction would be required for Alternative 3 compared to the proposed Project; therefore, construction emissions would be less than the proposed Project and less than significant. Alternative 3 would generate 1,890 fewer vehicle trips daily than the proposed Project because there would be no trips associated with a school. Therefore, emissions generated during operation of Alternative 3 would be less than the proposed Project and would not exceed the SCAQMD thresholds. As such, Alternative 3 would not result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment. Alternative 3 would be consistent with the SCAQMD Final 2016 AQMP because: (1) the construction and operation emissions would be less than the proposed Project and would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) although Alternative 3 would not be consistent with the land use designations of the Project site, the alternative would be expected to generate a net decrease in emissions as compared to the currently adopted land use designation. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant. For these reasons, Alternative 3 air quality impacts would be less than significant and less than that of the proposed Project.

Biological Resources. No special-status plants are present on the Project site; therefore, the proposed Project would not impact special-status plant species. The proposed Project would remove 119.77 ac (115.26 ac permanently, 4.51 ac temporarily) of low-quality potential foraging habitat for two special-status bats: the western red bat and the western mastiff bat. The proposed Project would impact a small patch (0.28 ac) of Maritime Succulent Scrub/Southern Cactus Scrub (Coastal Sage Scrub) that is highly disturbed in nature and would not require mitigation because of its small size and degraded nature. While burrowing owls were not detected on the Project site during focused surveys, the proposed Project includes mitigation to ensure the species has not moved onto the site between the dates the survey was performed and construction commences through a pre-construction survey prior to ground disturbance, per CDFW survey guidelines. Bats have the potential to roost and possibly breed in Serrano Creek; therefore, mitigation would be implemented to reduce indirect impacts to bats during construction. Bat roosting/nursery exit counts and acoustic surveys would be conducted prior to the start of any construction activities, and a Bat Management Plan would be prepared, if required, based on the results of the survey. Project construction has the potential to introduce and spread nonnative species; therefore, mitigation would be implemented to ensure that the proposed landscaping would not include invasive exotic plants. Additionally, indirect impacts to Serrano Creek would be reduced through mitigation measures that require installation of construction fencing and implementation of BMPs. Additionally, an HMP would be prepared and the Open Space & Habitat & Restoration Area would be placed in a permanent conservation easement to avoid impacts to sensitive riparian habitat associated with Serrano Creek. The proposed Project would impact the on-site drainage that transverses the Project site and contains potential CDFW, ACOE, and RWQCB jurisdiction. Mitigation measures for jurisdictional waters includes coordination with ACOE, CDFW, and RWQCB regarding potential jurisdictional areas and the associated permitting processes and enhancement, re-establishment, or establishment of jurisdictional areas on off-site conserved lands. Finally, compliance with the MBTA and California Fish and Game Code Section 3503 would reduce construction impacts to nesting birds, including Cooper's hawk and red-tailed hawk in Serrano

Creek. In summary, compliance with the mitigation summarized above and existing regulatory requirements, such as the MBTA, would reduce potentially significant impacts to biological resources to less than significant.

Alternative 3 would include the same amount of residential development on the Project site as the proposed Project, but would not include a school. Alternative 3 would also include a 3.5 ac community garden. Because Alternative 3 would involve development on the same Project site and would include an Open Space & Habitat & Restoration Area along Serrano Creek, Alternative 3 impacts would be essentially the same as that of the proposed Project. Because the potential biological impacts of Alternative 3 would be comparable to those associated with the proposed Project, the same mitigation measures would be required. After implementation of mitigation, impacts to biological resources would be less than significant and comparable to that of the proposed Project.

Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. The proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the Project site. Due to the number of cultural resources recorded within 0.5 mi of the Project site and the location of the proposed Project site in the archaeologically sensitive Aliso Creek and Foothill areas (as identified in the City's General Plan), there is potential that ground-disturbing construction activities would impact archaeological resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 3 would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the Project site. Because the Project site is in an area of archaeological sensitivity, there is potential that ground-disturbing construction activities associated with the residential development and community garden would impact archaeological resources. Alternative 3 would be required to incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to cultural resources to a less than significant level.

In summary, Alternative 3 would result in no impacts to historical resources and less than significant impacts with mitigation incorporated for archaeological resources and human remains. Alternative 3 would result in comparable cultural resources impacts compared to the proposed Project because both alternatives include ground disturbance on the Project site.

Energy. Construction of the proposed Project would require energy for activities such as the manufacture and transportation of building materials, demolition and grading activities, and building construction. Total diesel fuel consumption would be 118,339 gal from construction truck trips. Total gasoline consumption would be 1,084,438 gal from construction worker vehicle trips. During operation, electricity demand would be 6,140,783 kWh per year and natural gas demand would be 116,020.6 therms per year, compared to the existing nursery use. The proposed Project would be constructed to CALGreen standards and appliances would be energy efficient, which would help to reduce energy and natural gas consumption. The proposed Project is estimated to generate approximately 5,948,016 VMT for the elementary school, 1,086,584 VMT for the retirement community, and 19,064,105 VMT for the single-family residential uses annually, which would result in an annual fuel consumption of 54,189 gal of gasoline and 758 gal of diesel. Although Project construction and operation would require using energy, the proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

Alternative 3 would include the same amount of residential development as the proposed Project but would not include a school. A similar grading footprint but less construction would be required for Alternative 3 compared to the proposed Project; therefore, energy use during construction would be less than the proposed Project. Alternative 3 would include the same amount of residential development on the Project site as the proposed Project but would not include a school. Buildings would be required to be constructed to CALGreen standards to reduce energy use. Because Alternative 3 includes less development than the proposed Project, consumption of natural gas and electricity during operation would be less. Alternative 3 would generate 5,948,016 fewer VMT, which would consume less fuel compared to the proposed Project, because there would be no school to generate these trips. Therefore, energy use during operation would be less than the proposed Project. Although construction and operation would require use of energy, operational energy demand would be less than the proposed Project during both construction and operation. Alternative 3 would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts related to energy use would be less than significant.

Geology and Soils. The proposed Project would not result in any impacts related to subsidence. Potential impacts related to expansive soils would be less than significant, and no mitigation is required. Impacts related to strong seismic ground shaking, liquefaction, slope stability, lateral spreading, unsuitable soils (from settlement), and corrosive soils are considered potentially significant, and mitigation is required. The mitigation measures require compliance with the recommendations in the *Final Geotechnical Evaluation* and compliance with the CBC. With implementation of mitigation, the proposed buildings would be designed and constructed to current safety standards, and all potentially significant impacts related to soils and geology would be less than significant. The proposed Project would increase erosion and loss of topsoil during construction; however, Erosion Control and Sediment Control BMPs would be implemented during construction in compliance with the requirements of the Construction General Permit to ensure impacts related to erosion would be less than significant. The Project site is in an area previously determined as sensitive for paleontological resources; therefore, it is possible that ground-

disturbing construction activities could impact significant previously undiscovered paleontological resources. A PRIMP would be prepared and implemented to reduce potentially significant impacts to paleontological resources to less than significant.

Although Alternative 3 is reduced in size compared to the proposed Project because the school would not be constructed, the required grading and construction activities would result in the same or similar impacts related to geology and soils as the proposed Project. While some construction specifications would be different for this alternative compared to the proposed Project, the overall risks related to strong seismic ground shaking, liquefaction, slope stability, lateral spreading, unsuitable soils (from settlement), corrosive soils, and paleontological resources would be comparable. Therefore, it is anticipated that Alternative 3 impacts related to geology and soils would be similar to that of the proposed Project, and the same mitigation measures would be required.

In summary, Alternative 3 would result in potentially significant impacts related to geology and soils. These impacts would be less than significant with implementation of mitigation measures. Alternative 3 would result in impacts related to geology and soils that would be comparable to those of the proposed Project.

Greenhouse Gas Emissions. The proposed Project would result in 4.91 MT CO₂e/SP/yr in 2025 and 4.42 MT CO₂e/SP/yr in 2030 of GHG emissions. The total GHG emissions of the proposed Project would exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030; therefore, the proposed Project would result in a potentially significant impact related to GHG emissions generation. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. More than 73 percent of all mobile-source emissions in 2025 and 66 percent of all mobile-source emissions in 2030 (by weight) would be generated by the proposed Project's mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features included as part of the proposed Project. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the proposed Project's mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to the generation of GHG emissions would remain significant and unavoidable.

Alternative 3 would include the same amount of residential development as the proposed Project but would not include a school. The *Greenhouse Gas Analysis* (Urban Crossroads 2019b) included GHG modeling for residential sources and for "other" sources (which consist primarily of school emissions). The GHG modeling results for just the proposed residential uses are shown in Tables 5.C and 5.D, which represent the GHG emissions for Alternative 3. As shown in Tables 5.C and 5.D, the total GHG emissions of Alternative 3 would exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030, respectively; therefore, Alternative 3 would result in a potentially significant impact related to the generation of GHG emissions. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. A majority of the GHG emissions would be generated by the mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source

**Table 5.C: 2025 Greenhouse Gas Emissions for Alternative 3
(No School)**

Emissions Source		Emissions (MT/yr)			
		CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Annual construction-related emissions amortized over 30 years		372.21	0.04	0.00	373.19
Area	Residential	199.42	0.02	3.42E ⁻⁰³	200.84
Energy	Residential	1,712.09	0.09	0.03	1,722.16
Mobile	Residential	6,906.23	0.27	0.00	6,912.99
Waste	Residential	170.14	10.06	0.00	421.52
Water Usage	Residential	170.81	1.33	0.03	213.96
Total CO₂e (All Sources)		9,844.66			
<i>Existing Emissions</i>		<i>-599.10</i>			
Net CO₂e (Project Minus Existing)		9,245.56			
Project Service Population		2,289			
Total CO₂e/Service Population		4.04			
2025 GHG Service Population Threshold		3.84			
Threshold Exceeded?		YES			

Source: *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

Note: Service Population = 776 residential units times 2.95 persons per household = 2,289

CH₄ = methane

GHG = greenhouse gas

CO₂ = carbon dioxide

MT/yr = metric tons per year

CO₂e = carbon dioxide equivalent

N₂O = nitrous oxide

**Table 5.D: 2030 Greenhouse Gas Emissions for Alternative 3
(No School)**

Emissions Source		Emissions (MT/yr)			
		CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Annual construction-related emissions amortized over 30 years		372.21	0.04	0.00	373.19
Area	Residential	199.42	0.02	3.42E ⁻⁰³	200.84
Energy	Residential	1,549.03	0.09	0.03	1,559.10
Mobile	Residential	6,161.18	0.23	0.00	6,167.00
Waste	Residential	170.14	10.06	0.00	421.52
Water Usage	Residential	147.85	1.33	0.03	191.00
Total CO₂e (All Sources)		8,912.65			
<i>Existing Emissions</i>		<i>-599.10</i>			
Net CO₂e (Project Minus Existing)		8,313.55			
Project Service Population		2,289			
Total CO₂e/Service Population		3.63			
2030 GHG Service Population Threshold		2.88			
Threshold Exceeded?		YES			

Source: *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

Note: Service Population = 776 residential units times 2.95 persons per household = 2,289

CH₄ = methane

GHG = greenhouse gas

CO₂ = carbon dioxide

MT/yr = metric tons per year

CO₂e = carbon dioxide equivalent

N₂O = nitrous oxide

emissions beyond the regulatory requirements and project design features that would be included in Alternative 3. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the Alternative 3 mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to the generation of GHG emissions would remain significant and unavoidable but would be less than that of the proposed Project.

Hazards and Hazardous Materials. The proposed Project may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented that includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve the transport, use, and disposal of small quantities of hazardous materials or wastes associated with the routine maintenance of residential and school facilities. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities.

The proposed Project would include a school. In order to gain approval for development of a school at the Project site that would receive State funding, previous Phase I and II ESAs prepared for the Project would need to be submitted to the DTSC for review. The DTSC would determine whether or not additional sampling and analysis, preparation of a PEA, site remediation, and public review of reports are required in order to obtain a finding of "No Further Action". Coordination with DTSC is included as mitigation to reduce impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school. With implementation of the mitigation discussed above, impacts related to hazardous waste would be less than significant.

Alternative 3 would include the same amount of residential development as the proposed Project but would not include a school. Because Alternative 3 would not include a school, no impact related to hazardous emissions or hazardous materials within 0.25 mi of a school would occur. Alternative 3 would involve demolition of the existing structure, grading, and construction of new buildings, which would result in impacts related to hazardous waste and materials similar to that of the proposed Project. Alternative 3 may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented similar to the proposed Project that includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with the routine maintenance of the residents and school. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities. In

summary, with implementation a Demolition Plan, impacts related to hazardous waste would be less than significant and comparable to that of the proposed Project.

Hydrology and Water Quality. The proposed Project would develop the Project site with a new use and would increase impervious surface area on the Project site, which would increase stormwater runoff and change the pollutants of concern in stormwater runoff. The proposed Project would implement a comprehensive WQMP and BMPs to address pollutants of concern and to ensure protection of beneficial uses of receiving waters. In addition, the proposed Project includes drainage infrastructure and BMPs to minimize development impacts to the site hydrology in compliance with hydromodification requirements. Hydrology and water quality impacts of the proposed Project would be less than significant upon compliance with existing plans, programs, and policies in place to ensure compliance with NPDES regulations.

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses. Alternative 3 would change the use on the Project site, increase impervious surface area, increase stormwater runoff, and change the pollutants of concern in stormwater runoff. Alternative 3 would be required to implement BMPs and drainage infrastructure to reduce pollutants of concern on the Project site and reduce stormwater runoff in compliance with NPDES and hydromodification requirements.

With compliance with adopted regulations, Alternative 3 would result in less than significant impacts related to hydrology and water quality. The hydrology and water quality impacts of Alternative 3 would be comparable to the hydrology and water quality impacts of the proposed Project with implementation of BMPs and drainage infrastructure in compliance with adopted regulations.

Land Use and Planning. The proposed Project would be consistent with the SCAG 2008 RCP and RTP/SCS by siting residential uses near commercial/industrial uses and major transportation corridors and transit stops, providing new housing, and providing an open space and habitat restoration area. The proposed Project would require a General Plan Amendment to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High Density Residential, Public Facility, Neighborhood Parks, and Open Space and a Zone Change from General Agriculture (A-1) to Planned Community. Upon the approval of the General Plan Amendment and Zone Change request by the City Council, the proposed Project would be consistent with the land use designations contained in the City's General Plan and the City's Municipal Code and zoning. The proposed Project would not result in noise, air quality, or aesthetic impacts that would conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Impacts related to land use and planning would be less than significant, and no mitigation is required.

Alternative 3 would include the same amount of residential development as the proposed Project but would not include a school. Alternative 3 would be consistent with the SCAG 2008 RCP and RTP/SCS by siting commercial uses near residential development, providing new housing opportunities that focus on growth near major transportation corridors and transit stops, and providing an open space and habitat restoration area. Alternative 3 would require a General Plan

Amendment to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High Density Residential, Neighborhood Parks, and Open Space and a Zone Change from General Agriculture (A-1) to Planned Community. Upon the approval of the General Plan Amendment and Zone Change request by the City Council, Alternative 3 would be consistent with the land use designations contained in the City's General Plan and the City's Municipal Code and zoning. Alternative 3 would not result in noise, air quality, or aesthetic impacts that would conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Impacts related to land use and planning would be less than significant and comparable to those of the proposed Project.

Noise. Construction noise levels would range from 53.3 to 65.2 dBA L_{eq} at the sensitive receiver locations. Construction vibration velocity levels are expected to range from 0.002 to 0.008 in/sec PPV. During operation, off-site traffic-associated trips generated from the proposed Project would increase noise levels by 0.1 to 0.72 dBA CNEL on the study area roadway segments. Operational noise generated from the on-site uses would range from 17.9 to 32.5 dBA L_{50} at the sensitive off-site receiver locations. The construction noise, construction vibration, off-site traffic, and on-site operational noise levels would not exceed City noise level standards or Caltrans construction vibration standards, and impacts would be less than significant. Operation would not generate excessive ground-borne vibration or ground-borne noise, and impacts would be less than significant. Adjacent traffic noise from nearby roadways and freeways would not exceed the City's exterior noise standards at the proposed outdoor uses on the Project site with the planned 6 ft high noise barriers, and impacts would be less than significant. Additionally, interior noise levels within the proposed residences and school, which would be constructed to meet ventilation standards and include dual-paned glass, are not anticipated to exceed the City's interior noise standards. However, a *Final Noise Study* would be required to verify the design and building performance, which is included as mitigation to ensure interior noise levels are reduced to less than significant.

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses, but would not include the school that is proposed as part of the proposed Project. Alternative 3 would generate similar noise levels during the construction period, but the duration of noise exposure would be less because the construction period would be slightly reduced. Alternative 3 would generate reduced operational noise compared to the proposed Project because the number of vehicular trips generated would be fewer. It is not anticipated that any heavy landscaping or farming equipment would be used in the community garden; therefore, this use would not generate excessive noise. Similar to the proposed Project, a *Final Noise Study* would be required to demonstrate that the interior noise levels within the proposed buildings would be less than the City's interior noise.

In summary, Alternative 3 would result in less than significant impacts at off-site sensitive receivers. On-site noise levels would be less than significant after mitigation (preparation of *Final Noise Study*). Alternative 3 would generate similar construction noise but for a shorter duration and would generate less operational noise than the proposed Project.

Population and Housing. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units, which would serve approximately

2,274 residents. Because the Project site is designed as Business Park and BDO, residential uses were not envisioned on the Project site, and the population increase from the proposed Project would not have been accounted for in the City's projected population growth. While the proposed Project would result in population growth, the growth attributable to the proposed Project would not be substantial in relation to existing or projected conditions in Lake Forest. The addition of new affordable housing units also supports the affordable housing goals of the City. Although the proposed Project would provide short-term construction jobs and the proposed school would employ 60 workers, up to 249 nursery employees would be displaced. However, given the availability of jobs in the region, it is anticipated that workers would find employment elsewhere. Although the Project may contribute to a decline in the jobs-housing ratio by adding a greater number of residential units to the City than job opportunities, the overall increase in housing compared to employment is not of sufficient magnitude to negatively affect the forecasted jobs-housing ratio. The proposed Project would result in less than significant impacts related to population, housing, and employment growth.

Alternative 3 includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units, which would serve approximately 2,274 residents. The increased population from Alternative 3 would be the same as the proposed Project, which would not have been accounted for in the City's projected population. While Alternative 3 would result in population growth, the growth attributable to Alternative 3 would not be substantial in relation to the existing or projected conditions in Lake Forest. Additionally, Alternative 3 would support the affordable housing goals of the City by providing senior affordable housing. Alternative 3 would displace 249 nursery employees. Although Alternative 3 would provide short-term construction jobs, this alternative would not provide long-term job opportunities. Alternative 3 would contribute to a decline in the jobs-housing ratio by adding a greater number of residential units to the City than job opportunities. Additionally, because Alternative 3 includes the same residential units and fewer job opportunities than the proposed Project, the decline in the jobs-housing ratio would be greater than that of the proposed Project.

In summary, Alternative 3 would result in less than significant impacts related to population, housing, and employment growth. However, because Alternative 3 would include the same amount of housing and fewer job opportunities than the proposed Project, it would result in a greater decline in the balance between jobs and housing.

Public Services. Public service impacts related to fire and police protection services would be potentially significant; however, implementation of a CTMP would reduce construction impacts to less than significant, and a secured fire protection agreement and establishment of a Neighborhood Watch Program would reduce operational impacts to less than significant. The proposed Project includes the construction of a public elementary school on the Project site, and the Project Applicant/Developer would include an elementary school to reduce impacts on school services from the additional students generated by the proposed Project. Therefore, potential impacts related to the provision of school services for construction of the proposed Project would be less than significant. With the provision of on-site private parks and amenities, the proposed Project would not require the construction of new or expansion of existing construction, or expansion of existing recreational facilities or parks to maintain acceptable service ratios or performance objectives.

Based on the City's library demand ratio, the population growth that would result from the proposed Project would not require the expansion of existing library facilities in Lake Forest in order to maintain acceptable service ratios. Finally, OCTA would be able to provide adequate transit services to the proposed Project. Therefore, with implementation of the mitigation described above for fire and police service impacts, impacts to public services would be less than significant.

Alternative 3 would develop the Project site with single-family residential units and senior affordable rental units similar to the proposed Project, but would not include the school. Because Alternative 3 would include the same housing as the proposed Project, the increase in population and the resulting demand for public services would be comparable. The increased population from Alternative 3 would result in the same increase in demand for fire and emergency medical services, police protection, library, park, and transit services as the proposed Project. However, because Alternative 3 would not include a school, the increase in demand for schools from the additional students on the Project site would be greater than that of the proposed Project. Alternative 3 would include similar mitigation as the proposed Project, including implementation of a CTMP, establishment of a Neighborhood Watch Program, and payment of development fees. Additionally, Alternative 3 would include parks and open space to reduce demand for parks. Therefore, with implementation of mitigation, impacts to public services would be less than significant.

In summary, with implementation of the mitigation, Alternative 3 impacts to public services would be less than significant. Alternative 3 would result in the same increase in population; therefore, impacts related to increased demand for fire and emergency medical services, police protection, library, park, and transit services would be the same as the proposed Project. However, because Alternative 3 does not include a school, the increase in demand for schools services would be greater than the proposed Project.

Recreation. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable housing, which would increase the population in Lake Forest by approximately 2,274 persons. The increase in population would result in potentially significant impacts to existing neighborhood and regional parks and other recreational facilities. The proposed Project includes both private and public recreational uses on site. The City Municipal Code requires dedication of land equivalent to 5 ac per 1,000 residents or payment of in-lieu fees to reduce impacts to parklands. The proposed Project would meet the City's public park requirement of 11.37 ac by including approximately 21.41 ac of parks, open space, and habitat restoration area, of which 11.32 ac would be classified as public parks. Additionally, the proposed Project includes mitigation that requires on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation.

Alternative 3 would include the development of up to 675 single-family residential units and up to 101 senior affordable housing, which would increase the population in Lake Forest by approximately 2,274 persons. Alternative 3 would be required to meet the City's public park requirement of 11.37 ac through dedication of land or payment of in-lieu fees. Alternative 3 would include 21.41 ac of parks, open space, and habitat restoration area, of which 11.32 ac would be classified as public

parks.¹ The remaining 0.05 ac would be offset through payment of in-lieu fees. Alternative 3 would also include mitigation similar to the proposed Project that would require the on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation. Alternative 3 would result in comparable impacts to parks and recreational facilities as the proposed Project because both alternatives would offset impacts through construction of on-site parks and dedication of land or payment of in-lieu fees.

Transportation/Traffic. The proposed Project would increase VMT to 26,098,705 from the 2,698,384 VMT generated by the existing nursery. The proposed Project would not be inconsistent with *State CEQA Guidelines* Section 15064.3(b) because the City has not established thresholds for assessing VMT impacts; therefore, traffic impacts were assessed based on LOS. The proposed Project is anticipated to generate a total of approximately 8,789 trip-ends per day that would contribute to an impact at the Bake Parkway/Jeronimo Road intersection, which is currently operating at an unacceptable LOS. The proposed Project would mitigate the impact at this location to acceptable levels through a combination of fee payments to the City pursuant to a Fair Share Agreement or construction of the specific improvements. All construction equipment would be staged on-site, and mitigation would be implemented to require that large construction equipment be delivered during off-peak times to reduce travel during peak travel periods so that construction would not result in incompatible uses that increase on-road hazards. Mitigation measures also require a distance analysis to be prepared for all Project intersections to determine limited use areas (e.g., low-height landscaping), and on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right-in/right-out). With implementation of mitigation, project construction and operation would not result in incompatible uses that increase on-road hazards, and impacts would be reduced to less than significant. Preparation of a CTMP is required as mitigation to ensure that emergency vehicles would be able to navigate to the Project site through adjacent streets that may experience congestion due to construction activities. Impacts related to emergency access during construction would be reduced to less than significant with implementation of mitigation. The Area Plan meets or exceeds the OCFA requirements to not hinder fire and emergency access; therefore, operational impacts related to emergency access would be considered less than significant.

Alternative 3 would include the same amount of residential development as the proposed Project but would not include a school. A smaller grading footprint and less construction would be required for Alternative 3 compared to the proposed Project; therefore, Alternative 3 would require fewer construction trips than the proposed Project. A CTMP would be required for Alternative 3 to reduce impacts to emergency access during construction. Alternative 3 would generate 5,948,016 fewer VMT than the proposed Project because there would be no vehicle trips associated with the school. Therefore, traffic impacts would be less than the proposed Project. Alternative 3 would be required to mitigate any traffic impacts through a Fair Share Agreement or construction of the specific improvements, similar to the mitigation included for the proposed Project. Alternative 3 would be required to meet or exceed the OCFA requirements to not hinder fire and emergency access.

¹ Only 0.8 ac of trail within the open space and habitat and restoration area trail is classified as a public park.

In summary, Alternative 3 would result in less than significant impacts related to traffic after implementation of mitigation measures similar to those of the proposed Project. Alternative 3 would result in less traffic impacts during construction and operation compared to the proposed Project.

Tribal Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. No previously recorded cultural resources were identified in the Project site, and no specific information regarding tribal cultural resources was received during the Native American consultation. Therefore, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register. Based on the results of Native American consultation with the Gabrieleno Band of Mission Indians – Kizh Nation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to previously undiscovered significant tribal cultural resources through Native American monitoring and evaluation of archaeological resources by the Native American monitor, and reduce potentially significant impacts to Native American buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts from the proposed Project to a less than significant level.

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses and a community garden, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 3 would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register because no previously recorded cultural resources were identified in the Project site during the records search or during the Native American consultation. Based on the results of Native American consultation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. Alternative 3 would be required to incorporate the same mitigation measures as the proposed Project that require Native American monitoring and evaluation of archaeological resources by the Native American monitor, and compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to tribal cultural resources to a less than significant level.

In summary, Alternative 3 would result in no impacts to tribal cultural resources that are listed or eligible for listing in the California Register or a local register, and less than significant impacts with mitigation incorporated for previously undiscovered significant tribal cultural resources and Native American human remains. Alternative 3 would result in comparable tribal cultural resources impacts compared to the proposed Project because both alternatives include ground-disturbance on the Project site.

Utilities and Service Systems. Utilities and service systems include water, wastewater, electricity, natural gas, telecommunication, solid waste, and storm drain facilities. The proposed Project would increase demand for these services; however, there are sufficient supplies and capacity available to

service the increased demand. Impacts related to utilities and service systems would be less than significant.

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses but would not include a school. Alternative 3 would increase demand for utilities and service systems services; however, the increase in demand would be somewhat less than the proposed Project because there would be no demand associated with operation of the school. Therefore, there would be sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant and somewhat less than the proposed Project.

Wildfire. The Project site is designated as a non-VHFHSZ and is not located in or near an SRA. However, the Project site is in the vicinity of a VHFHSZ. The proposed Project would result in no impact related to installation of maintenance of infrastructure that may exacerbate fire risk. The proposed Project would result in less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks.

Alternative 3 would require temporary lane closures on nearby local roadways during construction, similar to the proposed Project; however, these closures would be anticipated to be implemented consistent with the *California Temporary Traffic Control Handbook* (California Inter-Utility Coordinating Committee 2018). Because Alternative 3 would generate less traffic than the proposed Project, study area intersections would be expected to operate at acceptable LOS. Therefore, the construction and operation of Alternative 3 would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The Project site is not located in a VHFHSZ. Despite the VHFHSZ to the northeast of the Project site, the uncontrolled spread of a wildfire in the vicinity of the Project site is unlikely due to the density of existing non-combustible development and roadways, specifically SR-241 and Rancho Parkway. Due to the lack of steep slopes, prevailing winds, location, and other factors, Alternative 3 would not exacerbate wildfire risks or expose people or structures to post-fire risks.

Alternative 3 would include installation of utilities and an on-site roadway network. The installation of Project-related utilities and an on-site roadway network would not exacerbate fire risk due to the Project site's location in an urban and built-out area outside of a designated fire hazard zone. Therefore, Alternative 3 would not require the installation or maintenance of associated infrastructure (e.g., roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment.

In summary, Alternative 3 would result in no impacts related to the installation or maintenance of infrastructure that may exacerbate fire risk, and less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks. Alternative 3 would result in similar wildfire impacts compared to the proposed Project because both alternatives include development of the Project site from a nursery to a residential use.

5.4.3.3 Project Objectives

Alternative 3 would develop the Project site with single-family residential and senior affordable rental uses but would not include a school. Alternative 3 would be potentially consistent with the following seven project objectives:

- Provide a comprehensive plan for development of the Nakase Property that implements the goals and policies of the Lake Forest General Plan.
- Provide a site design that is sensitive to the existing natural features, including Serrano Creek.
- Reduce vehicular traffic and peak-hour trips through thoughtful site planning that emphasizes connectivity, access, and mobility.
- Provide a balanced mix of single-family and attached senior affordable homes, open space, and active public and private uses.
- Provide an exceptional trail system and on-site parks that enhance the quality of life of the larger community.
- Provide for logical, attractive, and safe pedestrian and bicycle connections within the community.
- Create high-quality residential homes and distinct, identifiable neighborhoods with a range of specifically targeted single-family product types.

Because Alternative 3 would not include a school, it would not be consistent with the following project objective:

- Accommodate public uses by incorporating a new elementary school site conveniently located within easy walking distance for Project site residents.

5.4.4 Alternative 4: Reduced Project

5.4.4.1 Description

Alternative 4 assumes the Project site would be developed with single-family residential, senior affordable rental units, an elementary school, and parks, open space, and habitat restoration area similar to the proposed Project but at a reduced intensity. Alternative 4 includes development of 600 single-family residential units, 90 senior affordable rental units, an 11.5 ac elementary school, 19.41 ac of parks, open space, and habitat restoration area, and a 2 ac community garden.

Alternative 4 would include 75 fewer single-family residential units, 11 fewer senior affordable units, and 2.3 fewer acres of parks, open space, and habitat restoration area than the proposed Project, and would include the addition of a 2 ac community garden. Table 5.E summarizes the uses assumed on the Project site for Alternative 4.

Table 5.E: Land Use Statistics for Alternative 4 (Reduced Project)

Land Use	Planning Area	Maximum DU/ac	Acreage	Maximum # of Units
Residential	1	12.5	12.8	160
	2	17.9	5.6	100
	3	10.2	12.3	125
	4	9.6	13	125
	5	12.3	7.3	90
School	Elementary School Site	N/A	11.5	N/A
Affordable Housing	Senior Affordable Housing	34.6 (high density)	2.6	90
Parks and Open Space	Community Garden/Farm	N/A	2	N/A
	Central Park/Private Recreation Center	N/A	2.8	N/A
	Neighborhood Mini-Parks	NA	2.62	N/A
	Neighborhood Park	N/A	3.59	N/A
	Open Space & Habitat & Restoration Area	N/A	10.4	N/A
Utilitarian	Street Medians & Parkways	N/A	12.5	N/A
	Roads	N/A	22.8	N/A

Note: Grey highlighted rows show how Alternative 4 differs from the proposed Project.
DU/ac = dwelling units per acre
N/A = not applicable

5.4.4.2 Environmental Analysis.

Aesthetics. The Project site is located in a fully developed area (with the exception of the Project site) in the northern portion of Lake Forest. Although the proposed Project would obstruct some views of the Santa Ana Mountains and some views from the Serrano Creek Trail, most views would be preserved; therefore, the proposed Project would result in less than significant impacts related to scenic vistas. The proposed Project would not impact a State Scenic Highway because there are none in the vicinity of the Project site. The visual character and quality of the Project site and surrounding area would be preserved and enhanced through the application of the architectural and landscape design guidelines outlined in the Area Plan. Therefore, the proposed Project would not substantially degrade the visual character of the Project site, would not conflict with applicable zoning and other regulations governing scenic quality, and its impacts would be less than significant. The Project site is currently developed with few structures, and the majority of the Project site is not illuminated at night. The proposed Project would add lighting to the Project site that could result in impacts related to light and glare. However, the Project includes mitigation measures that require preparation of a comprehensive lighting plan and a photometric survey to demonstrate that no spill lighting or glare would occur in sensitive areas. With implementation of mitigation, impacts related to light and glare would be less than significant.

Since Alternative 4 results in a smaller project overall, the overall visual changes to the site would be less than those associated with the proposed Project. Therefore, the impacts of Alternative 4 to scenic vistas, degradation of the visual character of the Project site, and conflict with applicable zoning and other regulations governing scenic quality would be less than significant and less than the proposed Project. Alternative 4 would not impact a state scenic highway because none are located in the vicinity of the Project site.

Alternative 4 would require less nighttime lighting than the proposed Project. However, because Alternative 4 would introduce nighttime lighting to a Project site that is not currently illuminated at night on the majority of the site, Alternative 4 would result in potentially significant impacts related to new sources of nighttime light. The mitigation measures would be the same as the proposed Project and would require preparation of a comprehensive lighting plan and photometric survey and would reduce potential impacts related to lighting and glare to less than significant.

In summary, Alternative 4 would result in a potentially significant impact related to nighttime lighting which would be reduced to less than significant with mitigation. No impact to state scenic highways would occur. Other potential impacts related to aesthetics would be less than significant. Alternative 4 would result in a smaller project overall compared to the proposed Project and would therefore result in aesthetic impacts that are less than the proposed Project.

Agricultural Resources. According to the DOC, 119.2 ac of the approximately 122 ac Project site is designated as Unique Farmland. The Project site is currently being used as a retail nursery with all products grown and/or sold in pots. The proposed Project would permanently convert 119.2 ac of Unique Farmland to a non-agricultural use, which would result in a significant and unavoidable impact. The Project site has an agricultural district zoning designation. However, the Project Applicant/Developer is seeking a zoning classification amendment. Once the zone change is approved, the future use of the Project site would be consistent with the City's zoning designation, and impacts pertaining to conflicts with existing agricultural zoning would be less than significant. The Project site is not currently under a Williamson Act contract; therefore, the proposed Project would not conflict with an existing Williamson Act contract. The proposed Project would not involve other changes in the existing environment that, due to the location or nature, could result in conversion of Unique Farmland to a non-agricultural use. Mitigation measures were considered for the proposed Project in order to reduce the significant impact of converting Unique Farmland on the Project site to non-agricultural uses; however, none of the mitigation measures were feasible in large part because a lack of land designated as Important Farmland within the City or Orange County that could be used to offset the agricultural land conversion impact from the proposed Project.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. Alternative 4 would also include a 2 ac community garden. Alternative 4 would change the use on the Project site and would convert 117.2 ac of Unique Farmland to a non-agricultural use, while retaining 2 ac for gardening. Impacts pertaining to conflict with existing agricultural zoning associated with Alternative 4 would be less than significant. Alternative 4 would not conflict with an existing Williamson Act contract and would not involve other changes in the existing environment that, due to the location or nature, could result in conversion of Unique Farmland to a non-agricultural use. In addition, Alternative 3 would retain the agricultural character on a portion of the Project site in recognition that the Project site has been in agricultural production since 1938 and is a large percentage of the City's remaining agricultural land. Alternative 4 would convert 2 fewer acres of Unique Farmland than the proposed Project. However, the reduction in agricultural conversion amounts to approximately 2 percent of the Unique Farmland converted by the proposed Project. This reduction is not sufficient to reduce the significant and unavoidable impacts associated

with the conversion of agricultural land to a non-agricultural use to a less than significant impact.¹ There are no feasible mitigation measures to address the conversion of 117.2 ac of Unique Farmland to a non-agricultural use and thereby reduce the significant impacts to agricultural resources. Therefore, the agricultural impacts of Alternative 4 would be comparable to that of the proposed Project.

Air Quality. Air quality emissions associated with construction and operation of the proposed Project would not exceed SCAQMD significance thresholds. Therefore, impacts of the proposed Project related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable NAAQS or CAAQS would be less than significant. The proposed Project is consistent with the SCAQMD Final 2016 AQMP because (1) the construction and operational emissions of the proposed Project would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) although the proposed Project would not be consistent with the land use designations of the Project site, the proposed Project is expected to generate a net decrease in emissions as compared to the currently adopted land use designation. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. A similar grading footprint but less construction would be required for Alternative 4 compared to the proposed Project; therefore, construction emissions would be less than the proposed Project and less than significant. Alternative 4 would generate fewer vehicle trips as the proposed Project because there would be fewer residential uses and therefore fewer residents. Therefore, emissions generated during operation of Alternative 4 would be less than the proposed Project and would not exceed the SCAQMD thresholds. As such, Alternative 4 would not result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment. Alternative 4 would be consistent with the SCAQMD Final 2016 AQMP because (1) the construction and operational emissions would be less than the proposed Project and would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations; and (2) although Alternative 4 would not be consistent with the land use designations of the Project site, Alternative 4 would be expected to generate a net decrease in emissions as compared to the currently adopted land use designation. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant. For these reasons, Alternative 4 air quality impacts would be less than significant and less than the proposed Project.

Biological Resources. No special-status plants are present on the Project site; therefore, the proposed Project would not impact special-status plant species. The proposed Project would remove 119.77 ac (115.26 ac permanently, 4.51 ac temporarily) of low-quality potential foraging habitat for two special-status bats: the western red bat and the western mastiff bat. The proposed Project

¹ The California Department of Conservation has indicated that the Project site would lose its Important Farmland designation if the remaining agricultural use is less than 10 ac (e-mail communication with Troy Dick, Research Analyst II, California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program, July 19, 2019).

would impact a small patch (0.28 ac) of Maritime Succulent Scrub/Southern Cactus Scrub (Coastal Sage Scrub) that is highly disturbed in nature and would not require mitigation because of its small size and degraded nature. While burrowing owls were not detected on the Project site during focused surveys, the proposed Project includes mitigation to ensure the species has not moved onto the site between the dates the survey was performed and construction commences through a pre-construction survey prior to ground disturbance, per CDFW survey guidelines. Bats have the potential to roost and possibly breed in Serrano Creek; therefore, mitigation would be implemented to reduce indirect impacts to bats during construction. Bat roosting/nursery exit counts and acoustic surveys would be conducted prior to the start of any construction activities, and a Bat Management Plan would be prepared, if required, based on the results of the survey. Project construction has the potential to introduce and spread nonnative species; therefore, mitigation would be implemented to ensure the proposed landscaping would not include invasive exotic plants. Additionally, indirect impacts to Serrano Creek would be reduced through mitigation measures that require installation of construction fencing and implementation of BMPs. Additionally, an HMP would be prepared, and the Open Space & Habitat & Restoration Area placed in a permanent conservation easement to avoid impacts to sensitive riparian habitat associated with Serrano Creek. The proposed Project would impact the on-site drainage that transverses the Project site and contains potential CDFW, ACOE, and RWQCB jurisdiction. Mitigation measures for jurisdictional waters includes coordination with ACOE, CDFW, and RWQCB regarding potential jurisdictional areas and the associated permitting processes and enhancement, re-establishment, or establishment of jurisdictional areas on off-site conserved lands. Finally, compliance with the MBTA and California Fish and Game Code Section 3503 would reduce construction impacts to nesting birds, including Cooper's hawk and red-tailed hawk, in Serrano Creek. In summary, compliance with the mitigation summarized above and existing regulatory requirements, such as the MBTA, would reduce potentially significant impacts to biological resources to less than significant.

Alternative 4 would develop the Project site with business park uses consistent with the existing Business Park and BDO land use designation. Because Alternative 4 would involve development on the same Project site and would include an Open Space & Habitat & Restoration Area along Serrano Creek, Alternative 4 impacts would be essentially the same as the proposed Project. Because the potential biological impacts of Alternative 4 would be comparable to those associated with the proposed Project, the same mitigation measures would be required. After implementation of mitigation, impacts to biological resources would be less than significant and comparable to the proposed Project.

Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. The proposed Project would not cause a substantial adverse change in the significance of a historical resources as defined by CEQA because no previously recorded historical resources were identified in the Project site. Due to the number of cultural resources recorded within 0.5 mi of the Project site and the location of the proposed Project site in the archaeologically sensitive Aliso Creek and Foothill areas (as identified in the City's General Plan), there is potential that ground-disturbing construction activities would impact archaeological resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and reduce potentially significant impacts to previously undiscovered buried human remains through

compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density than the proposed Project, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 4 would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the Project site. Because the Project site is in an area of archaeological sensitivity, there is potential that ground-disturbing construction activities would impact archaeological resources. Alternative 4 would be required to incorporate mitigation measures to reduce potentially significant impacts to archaeological resources through archaeological monitoring and reduce potentially significant impacts to previously undiscovered buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to cultural resources to a less than significant level.

In summary, Alternative 4 would result in no impacts to historical resources and less than significant impacts with mitigation incorporated for archaeological resources and human remains. Alternative 4 would result in comparable cultural resources impacts compared to the proposed Project because both alternatives include ground disturbance on the Project site.

Energy. Construction of the proposed Project would require energy for activities such as the manufacture and transportation of building materials, demolition and grading activities, and building construction. Total diesel fuel consumption would be 118,339 gal from construction truck trips. Total gasoline consumption would be 1,084,438 gal from construction worker vehicle trips. During operation, electricity demand would be 6,140,783 kWh per year and natural gas demand would be 116,020.6 therms per year, compared to the existing nursery use. The proposed Project would be constructed to CALGreen standards and appliances would be energy efficient, which would help to reduce energy and natural gas consumption. The proposed Project is estimated to generate approximately 5,948,016 VMT for the elementary school, 1,086,584 VMT for the retirement community, and 19,064,105 VMT for the single-family residential uses annually, which would result in an annual fuel consumption of 54,189 gal of gasoline and 758 gal of diesel. Although Project construction and operation would require using energy, the proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. A similar grading footprint but less construction would be required for Alternative 4 compared to the proposed Project; therefore, energy use during construction would be less than the proposed Project. Alternative 4 would include less residential development than the proposed Project and the building would be required to be constructed to CALGreen standards to reduce energy use. Because Alternative 4 includes less development than the proposed Project, the consumption of natural gas and electricity during operation would be less. Alternative 4 would generate fewer vehicle trips,

which would reduce fuel consumption compared to the proposed Project because there would be fewer residential uses and therefore fewer residents. Therefore, energy use during operation would be less than the proposed Project. Although construction and operation would require using energy, construction and operational energy demand would be less than the proposed Project during both construction and operation, and would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, Alternative 4 impacts related to energy use would be less than significant.

Geology and Soils. The proposed Project would not result in any impacts related to subsidence. Potential impacts related to expansive soils would be less than significant, and no mitigation is required. Impacts related to strong seismic ground shaking, liquefaction, slope stability, lateral spreading, unsuitable soils (from settlement), and corrosive soils are considered potentially significant, and mitigation is required. The mitigation measures require compliance with the recommendations in the *Final Geotechnical Evaluation* and compliance with the CBC. With implementation of mitigation, the proposed buildings would be designed and constructed to current safety standards, and all potentially significant impacts related to soils and geology would be less than significant. The proposed Project would increase erosion and loss of topsoil during construction; however, Erosion Control and Sediment Control BMPs would be implemented during construction in compliance with the requirements of the Construction General Permit to ensure that impacts related to erosion would be less than significant. The Project site is in an area previously determined as sensitive for paleontological resources; therefore, it is possible that ground-disturbing construction activities could impact significant previously undiscovered paleontological resources. A PRIMP would be prepared and implemented to reduce potentially significant impacts to paleontological resources to less than significant.

Although Alternative 4 is reduced in overall development intensity compared to the proposed Project, the required grading and construction activities would result in the same or similar impacts related to geology, soils, and paleontological resources as the proposed Project. While some construction specifications would be different for Alternative 4 compared to the proposed Project, the overall risks related to strong seismic ground shaking, liquefaction, slope stability, lateral spreading, unsuitable soils (from settlement), corrosive soils, and paleontological resources would be comparable. Therefore, it is anticipated that Alternative 4 would result in similar impacts related to geology, soils, and paleontological resources as the proposed Project, and the same mitigation measures would be required.

In summary, Alternative 4 would result in potentially significant impacts related to geology, soils, and paleontological resources. These impacts would be less than significant with implementation of mitigation measures. Alternative 4 would result in impacts related to geology, soils, and paleontological resources that would be comparable to those of the proposed Project.

Greenhouse Gas Emissions. The proposed Project would result in 4.91 MT CO₂e/SP/yr in 2025 and 4.42 MT CO₂e/SP/yr in 2030 of GHG emissions. The total GHG emissions of the proposed Project would exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030; therefore, the proposed Projects would result in a potential significant impact related to generation

of GHG emissions. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. More than 73 percent of all mobile-source emissions in 2025 and 66 percent of all mobile-source emissions in 2030 (by weight) would be generated by the proposed Project's mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features included as part of the proposed Project. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the proposed Projects mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to generation of GHG emissions would remain significant and unavoidable.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. Alternative 4 would include approximately 10 percent less housing and residents compared to the proposed Project. Alternative 4 would also include a school. The *Greenhouse Gas Analysis* (Urban Crossroads 2019b) included GHG modeling for residential sources and for "other" sources (which consist primarily of school emissions). The GHG emissions were calculated assuming residential emissions would be reduced by 10 percent compared to the proposed Project (see Tables 5.F and 5.G). As shown in Tables 5.F and 5.G, the total GHG emissions of Alternative 4 would exceed the thresholds of 3.84 MT CO₂e/SP/yr for 2025 and 2.88 MT CO₂e/SP/yr for 2030, respectively; therefore Alternative 4 would result in a potential significant impact related to generation of GHG emissions. Although construction emissions would be reduced because less construction would be required compared to the proposed Project, no reduction would be large enough to reduce the impact to less than significant. No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. A majority of the GHG emissions would be generated by the mobile sources (traffic). Neither the Project Applicant/Developer nor the City can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features that would be included in Alternative 4. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, Alternative 4's mobile-source emissions alone would still exceed the threshold of significance. Therefore, impacts related to the generation of GHG emissions would remain significant and unavoidable, but would be less than that of the proposed Project.

Hazards and Hazardous Materials. The proposed Project may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented that includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment.

**Table 5.F: 2025 Greenhouse Gas Emissions for Alternative 4
(Reduced Project)**

Emissions Source	Emissions (MT/yr)
	Total CO ₂ e
Annual construction-related emissions amortized over 30 years	373.19
Residential (90% less than proposed Project emissions of 9,471.47)	8,524.33
School	2,297.67
Total CO₂e (All Sources)	11,195.18
<i>Existing Emissions</i>	<i>-599.10</i>
Net CO₂e (Project Minus Existing)	10,596.08
Project Service Population	2,096
Total CO₂e/Service Population	5.06
2025 GHG Service Population Threshold	3.84
Threshold Exceeded?	YES

Source: *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

Note: Service Population = 690 residential units times 2.95 persons per household plus 60 employees = 2,096

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

GHG = greenhouse gas

MT/yr = metric tons per year

N₂O = nitrous oxide

**Table 5.G: 2030 Greenhouse Gas Emissions for Alternative 4
(Reduced Project)**

Emissions Source	Emissions (MT/yr)
	Total CO ₂ e
Annual construction-related emissions amortized over 30 years	373.19
Residential (90% less than proposed Project emissions of 8,539.46)	7,685.51
School	2,059.92
Total CO₂e (All Sources)	10,118.62
<i>Existing Emissions</i>	<i>-599.10</i>
Net CO₂e (Project Minus Existing)	9,519.52
Project Service Population	2,096
Total CO₂e/Service Population	4.54
2030 GHG Service Population Threshold	2.88
Threshold Exceeded?	YES

Source: *Greenhouse Gas Analysis* (Urban Crossroads 2019b).

Note: Service Population = 690 residential units times 2.95 persons per household plus 60 employees = 2,096

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

GHG = greenhouse gas

MT/yr = metric tons per year

N₂O = nitrous oxide

Operation and maintenance of the Project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of residential and school facilities. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities. The proposed Project would include a school. In order to gain approval for development of a school at the Project site that would receive State funding, previous Phase I and II ESAs prepared for the Project would need to be submitted to the DTSC for review. The DTSC would determine whether or not additional sampling and analysis, preparation of a PEA, site remediation, and public review of reports are required in order to obtain a finding of “No Further Action”. Coordination with the DTSC is included as mitigation to reduce impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school. With implementation of the mitigation discussed above, impacts related to hazardous waste would be less than significant.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. Alternative 4 would involve demolition of the existing structure, grading, and construction of new buildings that would result in similar impacts related to hazardous waste and materials compared to the proposed Project. Alternative 4 may result in a significant impact related to the possible discovery of unknown waste or suspect materials, or upset or accident of hazardous materials on the Project site during demolition, grading, or construction activities. In addition, the presence of ACMs, lead-based paint, mercury, and PCBs cannot be ruled out in the existing structure that would be demolished. Mitigation would be implemented similar to the proposed Project that includes preparation of a Demolition Plan to specify how to appropriately contain, remove, and dispose of hazardous building materials or unknown hazardous materials to protect human health and the environment. Operation and maintenance of the Project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes associated with routine maintenance of the residents and school. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with the proposed facilities. Alternative 4 would include a school, and impacts related to hazardous emissions or hazardous materials within 0.25 mi of a school could occur; therefore, a finding of “No Further Action” would be required to be obtained from the DTSC. With implementation a Demolition Plan and a finding of “No Further Action”, impacts related to hazardous waste would be less than significant and comparable to that of the proposed Project.

Hydrology and Water Quality. The proposed Project would develop the Project site with a new use and would increase impervious surface area on the Project site, which would increase stormwater runoff and change the pollutants of concern in stormwater runoff. The proposed Project would implement a comprehensive WQMP and BMPs to address pollutants of concern and to ensure protection of beneficial uses of receiving waters. In addition, the proposed Project includes drainage infrastructure and BMPs to minimize development impacts to the site hydrology in compliance with hydromodification requirements. Hydrology and water quality impacts of the proposed Project would be less than significant upon compliance with existing plans, programs, and policies in place to ensure compliance with NPDES regulations.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. Alternative 4 would change the use on the Project site, increase impervious surface area, increase stormwater runoff, and change the pollutants of concern in stormwater runoff. Alternative 4 is anticipated to include less impervious surface area than the proposed Project; therefore, the increased runoff and pollutant loading would be less than the proposed Project. Similar to the proposed Project, Alternative 4 would be required to implement BMPs and drainage infrastructure to reduce pollutants of concern on the Project site and reduce stormwater runoff in compliance with NPDES and hydromodification requirements.

With compliance with adopted regulations, Alternative 4 would result in less than significant impacts related to hydrology and water quality. The hydrology and water quality impacts of Alternative 4 would result in less hydrology and water quality impacts compared to the proposed Project. However, Alternative 4 would also be required to implement BMPs and drainage infrastructure in compliance with adopted regulations similar to the proposed Project.

Land Use and Planning. The proposed Project would be consistent with the SCAG 2008 RCP and RTP/SCS by siting residential uses near commercial/industrial uses and major transportation corridors and transit stops, providing new housing, and providing an open space and habitat restoration area. The proposed Project would require a General Plan Amendment to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High Density Residential, Public Facility, Neighborhood Parks, and Open Space and a Zone Change from General Agriculture (A-1) to Planned Community. Upon the approval of the General Plan Amendment and Zone Change request by the City Council, the proposed Project would be consistent with the land use designations contained in the City's General Plan and the City's Municipal Code and zoning. The proposed Project would not result in noise, air quality, or aesthetic impacts that would conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Impacts related to land use and planning would be less than significant, and no mitigation is required.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. Alternative 4 would be consistent with the SCAG 2008 RCP and RTP/SCS by siting commercial uses near residential development, providing new housing opportunities that focus on growth near major transportation corridors and transit stops, and providing an open space and habitat restoration area. Alternative 4 would require a General Plan Amendment to modify the land use designation of the Project site from Business Park to Low-Medium and Medium Density Residential, High Density Residential, Public Facility, Neighborhood Parks, and Open Space and a Zone Change from General Agriculture (A-1) to Planned Community. Upon the approval of the General Plan Amendment and Zone Change request by the City Council, Alternative 4 would be consistent with the land use designations contained in the City's General Plan and the City's Municipal Code and zoning. Alternative 4 would not result in noise, air quality, or aesthetic impacts that would conflict with adjacent land uses and would not conflict with the Orange County NCCP/HCP. Alternative 4 impacts related to land use and planning would be less than significant and comparable to those of the proposed Project.

Noise. Construction noise levels would range from 53.3 to 65.2 dBA L_{eq} at the sensitive receiver locations. Construction vibration velocity levels are expected to range from 0.002 to 0.008 in/sec PPV. During operation, off-site traffic-associated trips generated from the proposed Project would increase noise levels by 0.1 to 0.72 dBA CNEL on the study area roadway segments. Operational noise generated from the on-site uses would range from 17.9 to 32.5 dBA L_{50} at the sensitive off-site receiver locations. The construction noise, construction vibration, off-site traffic, and on-site operational noise levels would not exceed City noise level standards or Caltrans construction vibration standards, and impacts would be less than significant. Operation would not generate excessive ground-borne vibration or ground-borne noise, and impacts would be less than significant. Adjacent traffic noise from nearby roadways and freeways would not exceed the City's exterior noise standards at the proposed outdoor uses on the Project site with the planned 6 ft high noise barriers, and impacts would be less than significant. Additionally, interior noise levels within the proposed residences and school, which would be constructed to meet ventilation standards and include dual-paned glass, are not anticipated to exceed the City's interior noise standards. However, a *Final Noise Study* would be required to verify design and building performance, which are included as mitigation to ensure interior noise levels are reduced to less than significant.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density of single-family residential uses than the proposed Project. Alternative 4 would generate similar noise levels during the construction period, but the duration of the noise exposure would be less because the construction period would be reduced. Alternative 4 would generate less operational noise impacts than the proposed Project because the number of vehicular trips generated would be somewhat fewer. It is not anticipated that any heavy landscaping or farming equipment would be used in the community garden; therefore, this use would not generate excessive noise. Similar to the proposed Project, a *Final Noise Study* would be required to demonstrate that the interior noise levels within the proposed buildings would be less than the City's interior noise.

In summary, Alternative 4 would result in less than significant impacts at off-site sensitive receivers. On-site noise levels would be less than significant after mitigation (preparation of *Final Noise Study*). Alternative 4 would generate similar construction noise, but for a shorter duration, and would generate less operational noise than the proposed Project.

Population and Housing. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units, which would serve approximately 2,274 residents. Because the Project site is designed as Business Park and BDO, residential uses were not envisioned on the Project site, and the population increase from the proposed Project would not have been accounted for in the City's projected population growth. While the proposed Project would result in population growth, the growth attributable to the proposed Project would not be substantial in relation to the current or projected conditions in Lake Forest. The addition of new affordable housing units also supports the affordable housing goals of the City. Although the proposed Project would provide short-term construction jobs and the proposed school would employ 60 workers, up to 249 nursery employees would be displaced. However, given the availability of jobs in the region, it is anticipated that workers would find employment elsewhere. Although the Project may contribute to a decline in the jobs-housing ratio by adding a greater

number of residential units to the City than job opportunities, the overall increase in housing compared to employment is not of a sufficient magnitude to negatively affect the forecasted jobs-housing ratio. The proposed Project would result in less than significant impacts related to population, housing, and employment growth.

Alternative 4 would develop the Project site with up to 600 single-family residential units and up to 90 senior affordable rental units, which would serve approximately 2,022 residents. Although Alternative 4 would include fewer housing units and serve fewer residents than the proposed Project, the increased population from Alternative 4 would not have been accounted for in the City's projected population. While Alternative 4 would result in population growth, the growth attributable to Alternative 4 would not be substantial in relation to the existing or projected conditions in Lake Forest. Additionally, Alternative 4 would support the affordable housing goals of the City by providing senior affordable housing. Alternative 4 would displace 249 nursery employees; however, Alternative 4 would also provide short-term construction jobs and the proposed school would employ 60 workers. Alternative 4 would contribute to a decline in the jobs-housing ratio by adding a greater number of residential units to the City than job opportunities. However, because Alternative 4 includes fewer residential units and the same job opportunities than the proposed Project, the decline in the jobs-housing ratio would be less than that of the proposed Project.

In summary, Alternative 4 would result in less than significant impacts related to population, housing, and employment growth. However, because Alternative 4 would include less housing and the same job opportunities than the proposed Project, it would result in less of a decline in the balance between jobs and housing. Therefore, Alternative 4 would have less impact related to population and housing than the proposed Project.

Public Services. Public service impacts related to fire and police protection services would be potentially significant; however, implementation of a CTMP would reduce construction impacts to less than significant, and a secured fire protection agreement and establishment of a Neighborhood Watch Program would reduce operational impacts to less than significant. The proposed Project includes the construction of a public elementary school on the Project site, and the Project Applicant/Developer would include an elementary school to reduce impacts on school services from the additional students generated by the proposed Project. Therefore, potential impacts related to the provision of school services for construction of the proposed Project would be less than significant. With the provision of on-site private parks and amenities, the proposed Project would not require the construction of new or expansion of existing construction, or expansion of existing recreational facilities or parks to maintain acceptable service ratios or performance objectives. Based on the City's library demand ratio, the population growth that would result from the proposed Project would not require the expansion of existing library facilities in Lake Forest in order to maintain acceptable service ratios. Finally, OCTA would be able to provide adequate transit services to the proposed Project. Therefore, with implementation of the mitigation described above for fire and police service impacts, impacts to public services would be less than significant.

Alternative 4 would develop the Project site with up to 600 single-family residential units and up to 90 senior affordable rental units, which would serve approximately 2,022 residents. Alternative 4

would include less housing and would result in less population growth than the proposed Project. The increased population from Alternative 4 would increase demand for fire and emergency medical services, police protection, library, park, school, and transit services, although the increased demand would be less than the proposed Project. Alternative 4 would include similar mitigation as the proposed Project, including implementation of a CTMP, establishment of a Neighborhood Watch Program, and payment of development fees. Additionally, Alternative 4 would include a school, and parks and open space to reduce demand for schools and parks. Therefore, with implementation of mitigation, impacts to public services would be less than significant.

In summary, with implementation of mitigation, Alternative 4 impacts to public services would be less than significant. Alternative 4 would result in less of an increase in population; therefore, impacts to public services would be less than the proposed Project.

Recreation. The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units, which would increase the population in the City by approximately 2,274 persons. The increase in population would result in potentially significant impacts to existing neighborhood and regional parks, and other recreational facilities. The proposed Project includes both private and public recreational uses on site. The City's Municipal Code requires dedication of land equivalent to 5 ac per 1,000 residents or payment of in-lieu fees to reduce impacts to parklands. The proposed Project would meet the City's public park requirement of 11.37 ac by including approximately 21.41 ac of parks, open space, and habitat restoration area, of which 11.32 ac would be classified as public parks. Additionally, the proposed Project includes mitigation that requires on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation.

Alternative 4 would develop the Project site with up to 600 single-family residential units and up to 90 senior affordable rental units. Alternative 4 would increase the population within Lake Forest by 2,022 persons, which is a public park requirement of 10.11 ac using the City's standard of 5 ac of recreational space per 1,000 residents. Alternative 4 would include 19.41 ac of parks, open space, and habitat restoration area, of which 9.02 ac would be classified as public parks. The remaining 2.35 ac would be offset through payment of in-lieu fees. Alternative 4 would also include mitigation similar to the proposed Project that would require on-site parks to be maintained in perpetuity. Therefore, impacts related to the use of existing neighborhood and regional parks and recreational facilities would be less than significant with implementation of mitigation. Alternative 4 would result in comparable impacts to parks and recreational facilities as the proposed Project because both alternatives would offset impacts by dedicating parkland through construction of on-site parks or payment of in-lieu fees.

Transportation/Traffic. The proposed Project would increase VMT to 26,098,705 from the 2,698,384 VMT generated by the existing nursery. The proposed Project would not be inconsistent with *State CEQA Guidelines* Section 15064.3(b) because the City has not established thresholds for assessing VMT impacts; therefore, traffic impacts were assessed based on LOS. The proposed Project is anticipated to generate a total of approximately 8,789 trip-ends per day that would contribute to an impact at the Bake Parkway/Jeronimo Road intersection, which is currently

operating at an unacceptable LOS. The proposed Project would mitigate the impact at this location to acceptable levels through a combination of fee payments to the City pursuant to a Fair Share Agreement or construction of the specific improvements. All construction equipment would be staged on site, and mitigation would be implemented to require that large construction equipment be delivered during off-peak times to reduce travel during peak travel periods so that construction would not result in incompatible uses that increase on-road hazards. Mitigation measures also require a distance analysis to be prepared for all Project intersections to determine limited use areas (e.g., low-height landscaping), and on-street parking restrictions (e.g., red curb), if necessary, and any turning restrictions (e.g., right-in/right-out). With implementation of mitigation, project construction and operation would not result in incompatible uses that increase on-road hazards, and impacts would be reduced to less than significant. Preparation of a CTMP is required as mitigation to ensure that emergency vehicles would be able to navigate to the Project site through adjacent streets that may experience congestion due to construction activities. Impacts related to emergency access during construction would be reduced to less than significant with implementation of mitigation. The Area Plan meets or exceeds the OCFA requirements to not hinder fire and emergency access; therefore, operational impacts related to emergency access would be considered less than significant.

Alternative 4 would include fewer residential units than the proposed Project. A similar grading footprint but less construction would be required for Alternative 4 compared to the proposed Project; therefore, construction trips would be less than the proposed Project. A CTMP would be required for Alternative 4 to reduce impacts to emergency access during construction. Alternative 4 would generate fewer vehicle trips compared to the proposed Project because there would be fewer residential uses and therefore fewer residents. Therefore, traffic impacts would be less than the proposed Project. Alternative 4 would be required to mitigate any traffic impacts through a Fair Share Agreement or construction of specific improvements, similar to the mitigation included for the proposed Project. Alternative 4 would be required to meet or exceed the OCFA requirements to not hinder fire and emergency access.

In summary, Alternative 4 would result in less than significant impacts related to traffic after implementation of mitigation measures similar to those of the proposed Project. Alternative 4 would result in less traffic impacts during construction and operation compared to the proposed Project.

Tribal Cultural Resources. The proposed Project would develop the Project site, which would require ground-disturbing construction activities. No previously recorded cultural resources were identified in the Project site, and no specific information regarding tribal cultural resources was received during the Native American consultation. Therefore, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register. Based on the results of Native American consultation with the Gabrieleno Band of Mission Indians – Kizh Nation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The proposed Project would incorporate mitigation measures to reduce potentially significant impacts to previously undiscovered significant tribal cultural resources through Native American monitoring and evaluation of archaeological resources by the Native

American monitor, and reduce potentially significant impacts to Native American buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density than the proposed Project, and would require ground-disturbing construction activities for the development. Similar to the proposed Project, Alternative 4 would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register because no previously recorded cultural resources were identified in the Project site during the records search or during the Native American consultation. Based on the results of Native American consultation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. Alternative 4 would be required to incorporate the same mitigation measures as the proposed Project that require Native American monitoring and evaluation of archaeological resources by the Native American monitor, and compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts related to tribal cultural resources to a less than significant level.

In summary, Alternative 4 would result in no impacts to tribal cultural resources that are listed or eligible for listing in the California Register or a local register, and less than significant impacts with mitigation incorporated for previously undiscovered significant tribal cultural resources and Native American human remains. Alternative 4 would result in comparable tribal cultural resources impacts compared to the proposed Project because both alternatives include ground disturbance on the Project site.

Utilities and Service Systems. Utilities and service systems include water, wastewater, electricity, natural gas, telecommunication, solid waste, and storm drain facilities. The proposed Project would increase demand for these services; however, there is sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant.

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density than the proposed Project. Alternative 4 would increase demand for these services; however, the increase in demand would be less than the proposed Project. Therefore, there would be sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant and also less than the proposed Project.

Wildfire. The Project site is designated as a non-VHFHSZ and is not located in or near an SRA. However, the Project site is in the vicinity of a VHFHSZ. The proposed Project would result in no impact related to installation or maintenance of infrastructure that may exacerbate fire risk. The proposed Project would result in less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks.

Alternative 4 would require temporary lane closures on nearby local roadways during construction, similar to the proposed Project; however, these closures would be anticipated to be implemented consistent with the *California Temporary Traffic Control Handbook* (California Inter-Utility Coordinating Committee 2018). Because Alternative 4 would generate less traffic than the proposed Project, study area intersections would be expected to operate at acceptable LOS. Therefore, construction and operation of Alternative 4 would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The Project site is not located in a VHFHSZ. Despite the VHFHSZ to the northeast of the Project site, the uncontrolled spread of wildfire in the vicinity of the Project site is unlikely due to the density of existing non-combustible development and roadways, specifically SR-241 and Rancho Parkway. Due to the lack of steep slopes, prevailing winds, location, and other factors, Alternative 4 would not exacerbate wildfire risks or expose people or structures to post-fire risks.

Alternative 4 would include installation of utilities and an on-site roadway network. The installation of Project-related utilities and an on-site roadway network would not exacerbate fire risk due to the Project site's location in an urban and built-out area outside of a designated fire hazard zone. Therefore, Alternative 4 would not require the installation or maintenance of associated infrastructure (e.g., roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment.

In summary, Alternative 4 would result in no impact related to installation or maintenance of infrastructure that may exacerbate fire risk and less than significant impacts related to impairment of an adopted emergency response or evacuation plan, exacerbation of wildfire risk, and exposure of people or structures to post-wildfire risks. Alternative 4 would result in similar wildfire impacts compared to the proposed Project because both alternatives include development of the Project site from a nursery to a residential use.

5.4.4.3 Project Objectives

Alternative 4 would develop the Project site with single-family residential and senior affordable rental uses but at a lower density than the proposed Project. Alternative 4 would be potentially consistent with all of the project objectives, which include:

- Provide a comprehensive plan for development of the Nakase Property that implements the goals and policies of the Lake Forest General Plan.
- Provide a site design that is sensitive to the existing natural features, including Serrano Creek.
- Reduce vehicular traffic and peak-hour trips through thoughtful site planning that emphasizes connectivity, access, and mobility.
- Provide a balanced mix of single-family and attached senior affordable homes, open space, and active public and private uses.
- Accommodate public uses by incorporating a new elementary school site conveniently located within easy walking distance for Project site residents.

- Provide an exceptional trail system and on-site parks that enhance the quality of life of the larger community.
- Provide for logical, attractive, and safe pedestrian and bicycle connections within the community.
- Create high-quality residential homes and distinct, identifiable neighborhoods with a range of specifically targeted single-family product types.

5.5 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an Environmentally Superior Alternative among the alternatives evaluated in an EIR. *State CEQA Guidelines* Section 15126.6(e)(2) provides that, if the No Project/No Build Alternative is the Environmentally Superior Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other alternatives. Table 5.H provides, in summary format, a comparison of the level of impacts of each alternative to the proposed Project.

Alternative 4 has the least impact on the environment because the Project site would be developed at a reduced density, thereby reducing the most of the proposed Project's environmental impacts compared to the other alternatives. However, Alternative 4 would not reduce the significant impacts related to agricultural resources and GHG emissions to a less than significant level. These impacts would remain significant and unavoidable. Additionally, Alternative 4 would potentially meet all of the project alternatives. Accordingly, it is determined that Alternative 4 is the Environmentally Superior Alternative because it would meet all of the project's objectives and result in reduced environmental impacts as compared to the proposed Project.

Table 5.H: Comparison of the Environmental Impacts of the Proposed Project and Project Alternatives

Impact Area	Proposed Project Impact with Mitigation (if any)	Alternative 1: No Project (Business Park)	Alternative 2: Urban Industrial/Residential	Alternative 3: No School	Alternative 4: Reduced Project
Aesthetics	Less than Significant ¹	Similar	Similar	Similar	Less
Agricultural Resources	Significant and Unavoidable	Similar	Similar	Similar	Similar
Air Quality	Less than Significant	Greater and Significant	Similar	Less	Less
Biological Resources	Less than Significant ¹	Similar	Similar	Similar	Similar
Cultural Resources	Less than Significant ¹	Similar	Similar	Similar	Similar
Energy	Less than Significant	Similar (construction) Greater (operation)	Similar	Less	Less
Geology and Soils	Less than Significant ¹	Similar	Similar	Similar	Similar
Greenhouse Gas Emissions	Significant and Unavoidable	Greater	Similar	Less (remains Significant)	Less (remains Significant)
Hazards and Hazardous Materials	Less than Significant ¹	Similar	Similar	Similar	Similar
Hydrology and Water Quality	Less than Significant	Similar	Similar	Similar	Similar
Land Use and Planning	Less than Significant	Similar	Similar	Similar	Similar
Noise	Less than Significant ¹	Similar (construction) Less (on-site operation) Greater (off-site traffic)	Similar	Similar (construction) Less (operational)	Similar (construction) Less (operational)
Population and Housing	Less than Significant	Less	Less	Greater	Less
Public Services	Less than Significant ¹	Less	Less	Greater (schools) Similar (all other public services)	Less
Recreation	Less than Significant ¹	Less	Similar	Similar	Similar
Transportation/Traffic	Less than Significant ¹	Similar (construction) Greater (operation)	Similar	Less	Less
Tribal Cultural Resources	Less than Significant ¹	Similar	Similar	Similar	Similar
Utilities and Service Systems	Less than Significant	Similar	Similar	Less	Less
Wildfire	Less than Significant	Similar	Similar	Similar	Similar

¹ Mitigation identified.

6.0 OTHER CEQA CONSIDERATIONS

6.1 SUMMARY OF SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(c) of the *State CEQA Guidelines* requires that an Environmental Impact Report (EIR) describe any significant impacts that cannot be avoided. Specifically, Section 15126.2(c) states that an EIR shall:

“Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.”

The Executive Summary of this document (Chapter 1.0) contains a detailed summary that identifies the proposed Project’s environmental impacts as compared to existing conditions, proposed mitigation measures, and the level of significance of any impacts after mitigation. The following is a summary of the impacts that are considered significant, adverse, and unavoidable after all mitigation is applied. These impacts are also described in detail in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

6.1.1 Agricultural Resources

The conversion of 119.2 acres (ac) of Important Farmland (Unique Farmland as designated by the California Department of Conservation [DOC] Farmland Mapping and Monitoring Program [FMMP]) to a non-agricultural use would be potentially significant. As described in Section 4.2.9 of this Draft EIR, mitigation was considered to reduce the impact of the conversion of 119.2 ac of Important Farmland to non-agricultural uses. However, the mitigation measures were not considered feasible; therefore, impacts pertaining to the conversion of Important Farmland to a non-agricultural use from implementation of the proposed Project would be significant and unavoidable.

6.1.2 Greenhouse Gas Emissions

The proposed Project would exceed the applicable South Coast Air Quality Management District (SCAQMD) Service Population greenhouse gas (GHG) thresholds for 2025 and 2030. Thus, Project-related emissions would have a potentially significant impact related to the generation of GHG emissions.

No feasible mitigation measures exist that would reduce GHG emissions to levels that are less than significant. More than 73 percent of all mobile-source emissions in 2025 and 66 percent of all mobile-source emissions in 2030 (by weight) would be generated by the proposed Project’s mobile sources (traffic). Neither the Project Applicant/Developer nor the City of Lake Forest (City) can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements and project design features included as part of the proposed Project. Additionally, even if mitigation were applied to reduce all other sources of GHG emissions to the maximum extent possible, the proposed Project’s mobile-source emissions alone would still exceed

the threshold of significance. Therefore, impacts related to the generation of GHG emissions would remain significant and unavoidable.

6.1.3 Conflict with Greenhouse Gas Emissions Reduction Plans, Policies, and Regulations

Although the Project would not conflict with any of the 2017 Scoping Plan elements, as discussed above, it would exceed the applicable Service Population GHG thresholds and consequently has the potential to result in a cumulatively considerable impact with respect to GHG emissions. This would result in a significant and unavoidable impact related to a conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As discussed previously, there is no available mitigation to substantially lessen or reduce this significant impact to less than significant. Therefore, impacts related to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions would remain significant and unavoidable.

6.2 ENERGY IMPACTS

According to Section 15126.2(b) of the *State CEQA Guidelines*, “[i]f analysis of the project’s energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use.”

As described in Section 4.6, Energy, of this Draft EIR, the proposed Project would not result in significant impacts related to energy use. Therefore, no mitigation is required.

6.3 GROWTH-INDUCING IMPACTS

Sections 15126(d) and 15126.2(e) of the *State CEQA Guidelines* require that an EIR analyze growth-inducing impacts and discuss the ways in which a proposed project could foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment. This section examines ways in which the proposed Project could foster economic or population growth, or the construction of additional housing either directly or indirectly in the surrounding environment. *State CEQA Guidelines* Section 15126.2(d) also requires a discussion of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. To address these issues, potential growth-inducing effects were examined through analysis of the following questions:

- Would the project remove obstacles to, or otherwise foster, population growth (e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development)?
- Would the project foster economic growth?
- Would approval of the project involve some characteristic that may encourage and facilitate other activities that could significantly affect the environment?

Growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment (*State CEQA Guidelines*, Section 15126.2(e)). This issue is presented to provide additional information on ways in which the proposed Project could contribute to significant changes in the environment beyond the direct consequences of developing the proposed land uses as described in earlier sections of this Draft EIR.

6.3.1 Removal of Obstacles to, or Otherwise Foster, Population Growth

The area surrounding the Project site is already highly urbanized and developed with a mix of residential, hotel, business park, regional park/open space, commercial, and light industrial land uses, so limited population growth is feasible within the vicinity of the Project site. In any event, the proposed Project would not remove impediments to population growth in the area surrounding the Project site. While the proposed Project may require water, sewer, electricity, and natural gas lines on site and in the immediate vicinity of the Project site, such improvements would be intended primarily to meet Project-related demand and would not necessitate substantial utility infrastructure improvements. In addition, all roadway improvements planned with respect to the proposed Project are intended to provide for better circulation flows within the Project site and the immediate Project vicinity, and would not foster off-site population growth.

The construction of the proposed Project would generate a substantial number of construction-related jobs. However, the proposed Project would not promote construction workers relocating their places of residence as a direct consequence of working on the proposed Project. The work requirements of most construction projects are highly specialized so construction workers remain at a job site only for the limited time in which their specific skills are needed to complete a particular phase of the construction process. In addition, as described in Section 4.13, Population and Housing, the supply of general construction labor in the region has been stable over recent years and is 13 percent above Orange County's 10-year average, suggesting a well-functioning construction job market and available regional labor pool. Therefore, given the availability of construction workers, the proposed Project would not induce material population growth from a short-term employment perspective.

Upon completion of the proposed Project, the 101 senior affordable housing units and 675 single-family residential units are estimated to generate a total of approximately 2,274 new residents on the Project site. While this direct population growth would increase the demand for neighborhood-serving commercial uses in the area surrounding the Project site, the proposed Project would be located in a built out area of Lake Forest that is already served by neighborhood-serving retail and service uses. Although some local businesses that provide goods and services to nearby residents may hire a small number of additional employees to accommodate the minor increase in clientele associated with the proposed Project, this additional hiring is not expected to induce material population growth because most of these new employees are not expected to change their place of residence.

With regard to Project operation, the proposed school is expected to employ 60 workers. Due to the limited number of jobs induced and the available labor pool within Lake Forest and the region, it is unlikely that the employment offered by the Project would cause people to move or relocate to the

area solely for the purpose of being close to the Project site. Therefore, although the proposed Project would provide employment opportunities, it would not result in substantial indirect growth or create a significant demand for housing in the Project site vicinity.

Therefore, given that the employment opportunities generated by the construction and operation of the proposed Project would be filled by people who would commute to the Project site, the potential population growth associated with Project employees would be minimal.

6.3.2 Foster Economic Growth

The proposed Project would introduce new residents that would invigorate the local economy by spending on goods and services at local businesses. As described in the *Nakase Project Fiscal Impact Analysis* prepared by Stanley R. Hoffman Associates (Appendix N), the proposed Project's residents are projected to spend approximately \$28.57 million in retail purchases on an annual basis in Lake Forest. As previously discussed, the construction of the proposed Project would generate a substantial number of construction-related jobs and new employment opportunities in Lake Forest during the construction period. As also discussed, the new school would be expected to employ 60 workers, and these positions would likely be filled by persons already residing in Lake Forest or the region. Therefore, the proposed Project would foster economic growth.

6.3.3 Other Characteristics

The proposed Project involves a General Plan Amendment and Zone Change to establish the Nakase Property Area Plan (Area Plan). The proposed Project includes the development of up to 675 single-family residential units and up to 101 senior affordable rental units on the Project site. Because the Area Plan included as part of the Project would not modify the existing General Plan land use designations or zoning classifications on any off-site properties, the Project would not directly increase the City's population beyond the number of residents who would live in the 776 on-site residential units. While it is conceivable that the Project's approval could attract the interest of new housing developers to Lake Forest who may seek the approval of General Plan Amendments or Zone Changes on other undeveloped or underutilized properties in the City for the purpose of developing new housing, it is highly unlikely given that the City of Lake Forest has very little land that would be able to accommodate new housing development that has not already been designated for housing. Any future growth in the City is likely to occur regardless of whether or not the Project is approved.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(d) of the *State CEQA Guidelines* requires that an EIR consider and discuss significant irreversible changes that would be caused by implementation of a proposed project. The *State CEQA Guidelines* specify that the use of nonrenewable resources during the initial and continued phases of a project should be discussed because a large commitment of such resources makes removal or non-use thereafter unlikely. Primary and secondary impacts (e.g., a highway improvement that provides access to a previously inaccessible area) should also be discussed because such changes generally commit future generations to similar uses. Irreversible damage can also result from environmental accidents associated with a project and should be discussed.

The types and level of development associated with the proposed Project would consume limited, slowly renewable, and nonrenewable resources. This consumption would occur during construction of the proposed Project and would continue throughout the operational lifetime of the proposed Project. The development of the proposed Project would require a commitment of resources that would include (1) building materials, (2) fuel and operational materials/resources, and (3) the transportation of goods and people to and from the Project site.

Construction of the proposed Project would require consumption of resources that are not replenishable or that may renew so slowly as to be considered nonrenewable. These resources would include certain types of lumber and other forest products (e.g., hardwood lumber), aggregate materials used in concrete and asphalt (e.g., sand, gravel, and stone), metals (e.g., steel, copper, and lead), petrochemical construction materials (e.g., plastics), and water. Fossil fuels (e.g., gasoline and oil) would also be consumed in the use of construction vehicles and equipment. Water, which is a limited, slowly renewable resource, would also be consumed during construction of the proposed Project. However, given the temporary nature of construction activities, water consumption during construction would result in a less than significant impact on water supplies. Furthermore, the use of construction vehicles and equipment would require the consumption of nonrenewable fossil fuels such as natural gas and oil. As with other resources consumed during construction, the consumption of nonrenewable fossil fuels for energy use would occur on a temporary basis during construction of the proposed Project.

Operation of the proposed Project would continue to expend similar nonrenewable resources that are currently consumed within Lake Forest and on site. These include energy resources such as electricity, petroleum-based fuels, fossil fuels, and water. Energy resources would be used for heating and cooling buildings, transportation within the Project site, and building lighting. Fossil fuels are primary energy sources for project construction and operation. This existing, finite energy source would thus be incrementally reduced. Under Title 24, Part 6 of the California Code of Regulations (CCR), conservation practices limiting the amount of energy consumed by the proposed Project would be required during operation. Nevertheless, the use of such resources would continue to represent a long-term commitment of essentially nonrenewable resources.

The proposed Project would result in the limited use of potentially hazardous materials contained in typical cleaning agents and pesticides for landscaping on the Project site. Such materials would be used, handled, stored, and disposed of in accordance with applicable government regulations and standards that would serve to protect against a significant and irreversible environmental change resulting from the accidental release of hazardous materials.

In summary, construction and operation of the proposed Project would commit the use of slowly renewable and nonrenewable resources and would limit the availability of these resources on the Project site for future generations or for other uses during the life of the proposed Project. However, the continued use of such resources during operation would be on a relatively small scale and consistent with regional and local urban design and development goals for the area. As a result, the use of nonrenewable resources in this manner would not result in significant irreversible changes to the environment under the proposed Project.

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7.0 LIST OF PREPARERS AND PERSONS CONSULTED

7.1 CITY OF LAKE FOREST

The following individuals from the City of Lake Forest (City) were involved in the preparation of this Draft Environmental Impact Report (EIR):

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7.3 TECHNICAL REPORT PREPARERS

The following individuals were involved in the preparation of the technical reports in support of this Draft EIR. The nature of their involvement is summarized below.

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The following individuals were involved in the preparation of the *Soil Characterization Assessment* (September 2016):

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7.3.7 NMG Geotechnical, Inc.

The following individuals were involved in the preparation of the *Geotechnical Evaluation of Proposed Residential and School Site Development* (April 2017):

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7.3.8 PlaceWorks

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7.3.9 Stanley R. Hoffman Associates

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7.3.10 Urban Crossroads

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 - Brandy Salas, Administrative Specialist

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