DRAFT

The Meadows at Bailey Canyon Specific Plan Environmental Impact Report

Prepared for:

NUWI Sierra Madre LLC
2001 Wilshire Boulevard, Suite 401
Santa Monica, California 90403

Prepared by:

DUDEK
2280 Historic Decatur Road, Suite 200
San Diego, California 92109

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Table of Contents

Section **Page No.**

ACRONYMS AND ABBREVIATIONS ..... ACR-I

ES EXECUTIVE SUMMARY ES-1
- ES.1 Project Location and Project Site ES-1
- ES.2 Project Description ES-2
  - ES.2.1 Project Objectives ES-2
  - ES.2.2 Discretionary Actions ES-3
- ES.3 Areas of Controversy ES-3
- ES.4 Issues to Be Resolved by the City Council ES-4
- ES.5 Project Alternatives ES-4
  - ES.5.1 Alternative 1: No Project/No Build Alternative ES-4
  - ES.5.2 Alternative 2: Existing Zoning and Land Use Designation: Communal Residential Facility Alternative ES-4
  - ES.5.3 Alternative 3: Existing Zoning and Land Use Designation: Private School Alternative ES-5
  - ES.5.4 Alternative 4: Reduced Development/No Park Alternative ES-5
- ES.6 Summary Table ES-5

1 INTRODUCTION 1-1
- 1.1 Project Purpose and Background 1-1
- 1.2 Scope of the Environmental Impact Report 1-1
- 1.3 Environmental Procedures 1-2
  - 1.3.1 California Environmental Quality Act Compliance 1-2
  - 1.3.2 Notice of Preparation and Scoping 1-2
  - 1.3.3 Overview of the EIR Process 1-4
- 1.4 Intended Uses of the EIR 1-4
- 1.5 Organization and Content of the EIR 1-5
- 1.6 Mitigation Monitoring and Reporting Program 1-5

2 ENVIRONMENTAL SETTING 2-1
- 2.1 Existing Site Conditions 2-1
  - 2.1.1 Surrounding Land Uses 2-1
  - 2.1.2 Existing Topography and Soils 2-1
  - 2.1.3 Existing Trees and Vegetation 2-1
  - 2.1.4 Climate 2-2
  - 2.1.5 Access 2-2
- 2.2 Existing Zoning and Land Use Designations 2-2

3 PROJECT DESCRIPTION 3-1
- 3.1 Project Location and Project Site 3-1

3.2 Project Objectives 3-1
3.3 Project Description 3-2
3.3.1 Residential Development 3-3
3.3.2 Neighborhood Park and Open Space 3-3
3.3.3 Open Space Dedication 3-3
3.3.4 Conceptual Landscape Plan 3-3
3.3.5 Wall and Fence Plan 3-4
3.3.6 Access and Circulation Network 3-4
3.3.7 Proposed Utilities 3-5
3.3.8 General Plan Land Use Amendment and Zone Change 3-6
3.3.9 Subdivision Map Act 3-6
3.3.10 Grading Plan 3-7
3.3.11 Development Agreement 3-7
3.3.12 Construction 3-7
3.3.13 Project Design Features 3-8
3.4 Discretionary Actions 3-16
3.5 Responsible Agencies 3-16

4 ENVIRONMENTAL ANALYSIS 4-1

4.1 Aesthetics 4.1-1
4.1.1 Existing Conditions 4.1-1
4.1.2 Relevant Plans, Policies, and Ordinances 4.1-3
4.1.3 Thresholds of Significance 4.1-5
4.1.4 Project Design Features 4.1-5
4.1.5 Impacts Analysis 4.1-6
4.1.6 Mitigation Measures 4.1-10
4.1.7 Level of Significance After Mitigation 4.1-10
4.2 Agriculture and Forestry Resources 4.2-1
4.2.1 Existing Conditions 4.2-1
4.2.2 Relevant Plans, Policies, and Ordinances 4.2-1
4.2.3 Thresholds of Significance 4.2-2
4.2.4 Project Design Features 4.2-3
4.2.5 Impacts Analysis 4.2-3
4.2.6 Mitigation Measures 4.2-4
4.2.7 Level of Significance After Mitigation 4.2-4
4.3 Air Quality 4.3-1
4.3.1 Existing Conditions 4.3-1
4.3.2 Relevant Plans, Policies, and Ordinances 4.3-11
4.3.3 Thresholds of Significance 4.3-17
4.3.4 Project Design Features 4.3-21
4.3.5 Impacts Analysis 4.3-21

4.3.6 Mitigation Measures 4.3-29
4.3.7 Level of Significance After Mitigation 4.3-30
4.4 Biological Resources 4.4-1
4.4.1 Existing Conditions 4.4-1
4.4.2 Relevant Plans, Policies, and Ordinances 4.4-3
4.4.3 Thresholds of Significance 4.4-9
4.4.4 Project Design Features 4.4-9
4.4.5 Impacts Analysis 4.4-10
4.4.6 Mitigation Measures 4.4-14
4.4.7 Level of Significance After Mitigation 4.4-15
4.5 Cultural Resources 4.5-1
4.5.1 Existing Conditions 4.5-1
4.5.2 Relevant Plans, Policies, and Ordinances 4.5-9
4.5.3 Thresholds of Significance 4.5-14
4.5.4 Project Design Features 4.5-14
4.5.5 Impacts Analysis 4.5-15
4.5.6 Mitigation Measures 4.5-20
4.5.7 Level of Significance After Mitigation 4.5-22
4.6 Energy 4.6-1
4.6.1 Existing Conditions 4.6-1
4.6.2 Relevant Plans, Policies, and Ordinances 4.6-2
4.6.3 Thresholds of Significance 4.6-6
4.6.4 Project Design Features 4.6-7
4.6.5 Impacts Analysis 4.6-7
4.6.6 Mitigation Measures 4.6-12
4.6.7 Level of Significance After Mitigation 4.6-12
4.7 Geology and Soils 4.7-1
4.7.1 Existing Conditions 4.7-1
4.7.2 Relevant Plans, Policies, and Ordinances 4.7-3
4.7.3 Thresholds of Significance 4.7-6
4.7.4 Project Design Features 4.7-6
4.7.5 Impacts Analysis 4.7-13
4.7.6 Mitigation Measures 4.7-17
4.7.7 Level of Significance After Mitigation 4.7-17
4.8 Greenhouse Gas Emissions 4.8-1
4.8.1 Existing Conditions 4.8-1
4.8.2 Relevant Plans, Policies, and Ordinances 4.8-5
4.8.3 Thresholds of Significance 4.8-19
4.8.4 Project Design Features 4.8-21
4.8.5 Impacts Analysis 4.8-21
4.8.6 Mitigation Measures 4.8-38

4.8.7 Level of Significance After Mitigation 4.8-38
4.9 Hazards and Hazardous Materials 4.9-1
4.9.1 Existing Conditions 4.9-1
4.9.2 Relevant Plans, Policies, and Ordinances 4.9-2
4.9.3 Thresholds of Significance 4.9-9
4.9.4 Project Design Features 4.9-10
4.9.5 Impacts Analysis 4.9-10
4.9.6 Mitigation Measures 4.9-16
4.9.7 Level of Significance After Mitigation 4.9-16
4.10 Hydrology and Water Quality 4.10-1
4.10.1 Existing Conditions 4.10-1
4.10.2 Relevant Plans, Policies, and Ordinances 4.10-4
4.10.3 Thresholds of Significance 4.10-8
4.10.4 Project Design Features 4.10-9
4.10.5 Impacts Analysis 4.10-10
4.10.6 Mitigation Measures 4.10-16
4.10.7 Level of Significance After Mitigation 4.10-16
4.11 Land Use and Planning 4.11-1
4.11.1 Existing Conditions 4.11-1
4.11.2 Relevant Plans, Policies, and Ordinances 4.11-2
4.11.3 Thresholds of Significance 4.11-5
4.11.4 Project Design Features 4.11-5
4.11.5 Impacts Analysis 4.11-5
4.11.6 Mitigation Measures 4.11-33
4.11.7 Level of Significance After Mitigation 4.11-33
4.12 Mineral Resources 4.12-1
4.12.1 Existing Conditions 4.12-1
4.12.2 Relevant Plans, Policies, and Ordinances 4.12-1
4.12.3 Thresholds of Significance 4.12-2
4.12.4 Project Design Features 4.12-2
4.12.5 Impacts Analysis 4.12-2
4.12.6 Mitigation Measures 4.12-3
4.12.7 Level of Significance After Mitigation 4.12-3
4.13 Noise 4.13-1
4.13.1 Existing Conditions 4.13-1
4.13.2 Relevant Plans, Policies, and Ordinances 4.13-3
4.13.3 Thresholds of Significance 4.13-8
4.13.4 Project Design Features 4.13-9
4.13.5 Impacts Analysis 4.13-10
4.13.6 Mitigation Measures 4.13-18
4.13.7 Level of Significance After Mitigation 4.13-19

4.14 Population and Housing....4.14-1
4.14.1 Existing Conditions....4.14-1
4.14.2 Relevant Plans, Policies, and Ordinances....4.14-3
4.14.3 Thresholds of Significance....4.14-5
4.14.4 Project Design Features....4.14-5
4.14.5 Impacts Analysis....4.14-5
4.14.6 Mitigation Measures....4.14-8
4.14.7 Level of Significance After Mitigation....4.14-8
4.15 Public Services....4.15-1
4.15.1 Existing Conditions....4.15-1
4.15.2 Relevant Plans, Policies, and Ordinances....4.15-3
4.15.3 Thresholds of Significance....4.15-7
4.15.4 Project Design Features....4.15-7
4.15.5 Impacts Analysis....4.15-8
4.15.6 Mitigation Measures....4.15-13
4.15.7 Level of Significance After Mitigation....4.15-13
4.16 Recreation....4.16-1
4.16.1 Existing Conditions....4.16-1
4.16.2 Relevant Plans, Policies, and Ordinances....4.16-3
4.16.3 Thresholds of Significance....4.16-4
4.16.4 Project Design Features....4.16-5
4.16.5 Impacts Analysis....4.16-5
4.16.6 Mitigation Measures....4.16-6
4.16.7 Level of Significance After Mitigation....4.16-6
4.17 Transportation....4.17-1
4.17.1 Existing Conditions....4.17-1
4.17.2 Relevant Plans, Policies, and Ordinances....4.17-2
4.17.3 Thresholds of Significance....4.17-4
4.17.4 Project Design Features....4.17-5
4.17.5 Impacts Analysis....4.17-5
4.17.6 Mitigation Measures....4.17-9
4.17.7 Level of Significance After Mitigation....4.17-10
4.18 Tribal Cultural Resources....4.18-1
4.18.1 Existing Conditions....4.18-1
4.18.2 Relevant Plans, Policies, and Ordinances....4.18-3
4.18.3 Thresholds of Significance....4.18-6
4.18.4 Project Design Features....4.18-6
4.18.5 Impacts Analysis....4.18-6
4.18.6 Mitigation Measures....4.18-9
4.18.7 Level of Significance After Mitigation....4.18-10

4.19 Utilities and Service Systems....4.19-1
4.19.1 Existing Conditions....4.19-1
4.19.2 Relevant Plans, Policies, and Ordinances....4.19-6
4.19.3 Thresholds of Significance....4.19-11
4.19.4 Project Design Features....4.19-11
4.19.5 Impacts Analysis....4.19-12
4.19.6 Mitigation Measures....4.19-17
4.19.7 Level of Significance After Mitigation....4.19-17
4.20 Wildfire....4.20-1
4.20.1 Existing Conditions....4.20-1
4.20.2 Relevant Plans, Policies, and Ordinances....4.20-3
4.20.3 Thresholds of Significance....4.20-9
4.20.4 Project Design Features....4.20-9
4.20.5 Impacts Analysis....4.20-9
4.20.6 Mitigation Measures....4.20-15
4.20.7 Level of Significance After Mitigation....4.20-15

5 CUMULATIVE EFFECTS....5-1
5.1 Introduction....5-1
5.2 Cumulative Methodology....5-1
5.3 Cumulative Projects....5-1
5.4 Cumulative Impact Analysis....5-2
5.4.1 Aesthetics....5-2
5.4.2 Agriculture and Forestry Resources....5-3
5.4.3 Air Quality....5-3
5.4.4 Biological Resources....5-4
5.4.5 Cultural Resources....5-5
5.4.6 Energy....5-5
5.4.7 Geology and Soils....5-6
5.4.8 Greenhouse Gas Emissions....5-6
5.4.9 Hazards and Hazardous Materials....5-7
5.4.10 Hydrology and Water Quality....5-7
5.4.11 Land Use and Planning....5-8
5.4.12 Mineral Resources....5-8
5.4.13 Noise....5-8
5.4.14 Population and Housing....5-10
5.4.15 Public Services....5-10
5.4.16 Recreation....5-11
5.4.17 Transportation....5-11
5.4.18 Tribal Cultural Resources....5-11

5.4.19 Utilities and Service Systems 5-12
5.4.20 Wildfire 5-13

6 GROWTH INDUCEMENT 6-1
6.1 Growth Inducement Due to Population Growth 6-1
6.2 Growth Inducement Due to Economic Growth 6-2
6.3 Growth Inducement Due to Additional Housing 6-2
6.4 Growth Inducement Due to Removal of Obstacles 6-3

7 SIGNIFICANT IRREVERISBLE CHANGES 7-1

8 ALTERNATIVES 8-1
8.1 Introduction 8-1
8.2 Project Objectives 8-1
8.3 Significant Impacts 8-2
8.4 Alternatives Considered but Rejected 8-2
8.4.1 Alternative Location 8-2
8.4.2 Reduced Intensity Institutional 8-3
8.5 Alternatives Under Consideration 8-3
8.6 Alternatives Impact Summary 8-4
8.6.1 Alternative 1: No Project/No Build Alternative 8-4
8.6.2 Alternative 2: Existing Zoning and Land Use Designation: Communal Residential Facility Alternative 8-7
8.6.3 Alternative 3: Existing Zoning and Land Use Designation: Private School Alternative 8-13
8.6.4 Alternative 4: Reduced Development/No Park Alternative 8-18
8.7 Environmentally Superior Alternative 8-23

9 REFERENCES 9-1

10 EIR PREPARERS 10-1
10.1 NUWI Sierra Madre LLC 10-1
10.2 Dudek 10-1
10.3 Subconsultants 10-1

Appendices

A1 NOP Comment Letters
A2 Scoping Meeting Comments
B Air Quality and Greenhouse Gas Emissions Analysis
C1 Biological Resources Report
C2 Arborist Report
D1 Historical Resources Report
D2 Archaeological Resources Assessment

E Geotech
F1 Phase 1 and Phase II ESA
F2 Fire Protection Plan
G Noise Measurements
H VMT Assessment
I **Confidential** Tribal Cultural Resources
J Comprehensive Water and Wastewater Cost of Service Study

Figures

3-1 Project Location 3-17
3-2 Conceptual Site Plan 3-19
3-3 Proposed Park Conceptual Plan 3-21
3-4 Open Space Dedication Area 3-23
3-5 Conceptual Landscape Plan 3-25
3-6 Proposed Street Sections 3-27
3-7 Proposed Drainage Plan 3-29
3-8 Proposed Water System 3-31
3-9 Proposed Wastewater System 3-33
3-10 Grading Plan 3-35
4.4-1 Vegetation and Land Cover Map 4.4-17
4.5-1 Site Map 4.5-23
4.9-1 Soil and Soil Vapor Sampling Locations 4.9-17
4.9-2 Fire Hazard Severity Zones 4.9-19
4.13-1 Noise Measurement and Modeling Locations 4.13-21
4.15-1 Facility Locations 4.15-15
4.17-1 VMT per Service Population 4.17-11
5-1 Cumulative Projects 5-15

Tables

ES-1 Summary of Project Impacts ES-6
3-1 Land Use Summary 3-2
3-2 Project Design Features 3-8
4.3-1 South Coast Air Basin Attainment Classification 4.3-7
4.3-2 Local Ambient Air Quality Data 4.3-9
4.3-3 Ambient Air Quality Standards 4.3-12
4.3-4 South Coast Air Quality Management District Air Quality Significance Thresholds 4.3-17
4.3-5 Construction Localized Significance Thresholds for Source Receptor Area 9 (East San Gabriel Valley) 4.3-19

4.3-6 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated....4.3-23
4.3-7 Estimated Maximum Daily Operational Criteria Air Pollutant Emissions - Unmitigated....4.3-24
4.3-8 Localized Significance Thresholds Analysis for Project Construction - Unmitigated....4.3-26
4.3-9 Construction Health Risk Assessment Results – Unmitigated....4.3-28
4.3-10 Localized Significance Thresholds Analysis for Project Construction - Mitigated....4.3-30
4.3-11 Construction Health Risk Assessment Results – Mitigated....4.3-31
4.5-1 Historical Aerial Photograph Review of Project Site and Surrounding Area....4.5-3
4.5-2 Previously Recorded Cultural Resources Within a 1-Mile Radius of the Proposed Project Site – Archaeological Resources....4.5-8
4.6-1 Construction Equipment Diesel Demand....4.6-8
4.6-2 Construction Worker Gasoline Demand....4.6-8
4.6-3 Construction Vendor Diesel Demand....4.6-8
4.6-4 Construction Haul Truck Diesel Demand....4.6-9
4.6-5 Annual Mobile Source Petroleum Demand....4.6-11
4.8-1 Greenhouse Gas Emissions Sources in California....4.8-4
4.8-2 Estimated Annual Construction Greenhouse Gas Emissions - Unmitigated....4.8-22
4.8-3 Estimated Annual Operational Greenhouse Gas Emissions....4.8-23
4.8-4 Applicable Greenhouse Gas-Related Laws and Regulations....4.8-23
4.8-5 Consistency with City of Sierra Madre's General Plan Policies....4.8-33
4.8-6 Project Consistency with Scoping Plan GHG Emission-Reduction Strategies....4.8-34
4.8-7 Project Consistency with the SCAG Connect SoCal RTP/SCS....4.8-37
4.11-1 Project's Consistency with City of Sierra Madre's General Plan Goal and Policies....4.11-8
4.13-1. Measured Community Noise Levels....4.13-3
4.13-2. Land Use Compatibility for Community Noise Exposure....4.13-5
4.13-3. Measures of Substantial Increase for Community Noise Sources....4.13-9
4.13-4. Typical Construction Equipment Maximum Noise Levels....4.13-10
4.13-5. Construction Noise Levels at Noise-Sensitive Uses....4.13-13
4.13-6. Traffic Noise Levels for Local Roadways Under Existing, Existing plus Project, Future, and Future plus Project Scenarios (dBA CNEL)....4.13-14
4.14-1 City of Sierra Madre Growth Forecast....4.14-2
4.14-2 Los Angeles County Growth Forecast....4.14-2
4.14-3 SCAG Region Growth Forecast....4.14-2
4.14-4 Projected Future Jobs-to-Housing Ratios....4.14-3
4.15-1 Enrollment and Capacity for 2012–2013....4.15-2
4.15-2 Students Generated by Proposed Project Households....4.15-11
4.16-1 City of Sierra Madre Existing Parks and Recreational Facilities....4.16-1
4.17-1 Project Trip Generation (Weekday)....4.17-6
4.17-2 Origin-Destination Vehicle Miles Travelled Analysis....4.17-8

4.18-1 Assembly Bill 52 and Senate Bill 18 Native American Tribal Consultation Results 4.18-7
4.19-1 Normal Year Supply and Demand Comparison 4.19-3
4.19-2 Single Dry Year Supply and Demand Comparison 4.19-3
4.19-3 Multiple Dry Year Supply and Demand Comparison 4.19-4
5-1 Cumulative Projects List 5-2
8-1 Alternatives Impact Summary 8-24

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ACM	asbestos-containing materials
ACWM	asbestos-containing waste materials
AF	acre feet
AFY	acre-feet per year
AIA	Airport Influence Area
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMSL	above mean sea level
AQMP	Air Quality Management Plan
AST	aboveground storage tank
BACT	Best Achievable Control Technology
BMP	best management practice
BTEX	toluene, ethylbenzene, and xylenes
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
Cal-OSHA	California Occupational Safety and Health Administration
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CCR	California Code of Regulations
CDF	controlled density fill
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CNEL	noise equivalent level
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
COS	Constructed Open Space
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CUP	Conditional Use Permit
CWA	Clean Water Act
DOC	Department of Conservation
DPM	diesel particulate matter
DPW	Department of Public Works

Acronym/Abbreviation	Definition
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EDR	Energy Design Rating
EIA	Energy Information Administration
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ERB	East Raymond Basin
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FICON	Federal Interagency Committee on Noise
FMA	Fuel Modification Area
FMMP	Farmland Mapping and Monitoring Program
FMZ	fuel modification zone
FPP	Fire Protection Plan
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutant
HERO	Human and Ecological Risk Office
HFCs	hydrofluorocarbons
HMS	Hazardous Materials System
HQTC	high-quality transit corridor
HRA	Health Risk Assessment
HVAC	heating, ventilation, and air conditioning
HWTS	Hazardous Waste Tracking System
I	Interstate
IBC	International Building Code
IPCC	Intergovernmental Panel on Climate Change
ITIP	Interregional Transportation Improvement Program
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACM	Museum of Los Angeles County
LACSD	Los Angeles County Sanitation District
LCFS	Low Carbon Fuel Standard
LHMP	Local Hazard Mitigation Plan
LID	low-impact development
LOS	level of service
LRA	Local Responsibility Area
LST	localized significance threshold
MAF	million acre-feet
MBTA	Migratory Bird Treaty Act
MDO	Medium Density Overlay
MGD	gallons per day

Acronym/Abbreviation	Definition
MM	Mitigation Measure
MPO	Metropolitan Planning Organization
MRZ	Mineral Resources Zone
MS4	municipal separate storm sewer system
MT	metric ton
MTA	Metropolitan Transportation Authority
MWD	Metropolitan Water District of Southern California
N^2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NETR	Nationwide Environmental Title Research
NF_3	nitrogen trifluoride
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NOS	Natural Open Space
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PDF	project design feature
PFCs	perfluorocarbons
PM_{10}	particulate matter 10 microns in diameter
$PM_{2.5}$	particulate matter 2.5 microns in diameter
PPV	peak particle velocity
PRC	Public Resources Code
PRIMP	Paleontological Resources Impact Mitigation Program
PUSD	Pasadena Unified School District
RBJ	Raymond Basin Judgment
RBMB	Raymond Basin Management Board
RCNM	Roadway Construction Noise Model
RCP	reinforced concrete pipe
REC	recognized environmental condition
RGB	Raymond Groundwater Basin
RHNA	Regional Housing Needs Assessment
RPS	Renewable Portfolio Standard
RSL	Regional Screening Level
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SB	State Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center

Acronym/Abbreviation	Definition
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SGVMWD	San Gabriel Valley Municipal Water District
SJCWRP	San Jose Creek Water Reclamation Plant
SLCP	short-lived climate pollutant
SLF	Sacred Lands Files
SMFD	Sierra Madre Fire Department
SMMC	Sierra Madre Municipal Code
SMPD	Sierra Madre Police Department
SMWD	Sierra Madre Water Department
SO_2	sulfur dioxide
SP	Specific Plan
SR	State Route
SRA	Source-Receptor Area
SSC	Species of Special Concern
SSMP	Sewer System Management Plan
SSO	sanitary sewer overflow
ST	short-term
STIP	Statewide Transportation Improvement Program
SVP	Society of Vertebrate Paleontology
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TBA	tert-butyl alcohol
TCR	tribal cultural resource
TMDL	total maximum daily load
TPA	transit-priority area
TPH	total petroleum hydrocarbons
UL	Underwriters Laboratory
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
UWMP	Urban Water Management Plan
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles travelled
VOC	volatile organic compound
WDR	waste discharge requirement
WMP	Waste Management Plan
WNWRP	Whittier Narrows Water Reclamation Plant
WUI	wildland/urban interface
ZEV	zero-emissions vehicle
ZNE	zero net energy

ES Executive Summary

This Environmental Impact Report (EIR) is an informational document intended for the use by the City of Sierra Madre (City), other public agencies, and members of the general public in evaluating the potential environmental effects of the proposed The Meadows at Bailey Canyon Specific Plan Project (project or proposed project).

California Environmental Quality Act (CEQA) Section 21002 requires that an EIR identify the significant effects of a project on the environment and provide measures or alternatives that can mitigate or avoid these effects. This Draft EIR evaluates the environmental effects associated with development of the project and discusses the manner in which the project's significant effects can be reduced or avoided through the implementation of mitigation measures or feasible alternatives to the proposed project. In accordance with Section 15130 of the CEQA Guidelines, this EIR also includes an examination of the effects of cumulative development.

This summary provides a brief synopsis of (1) the proposed project, (2) results of the environmental analysis contained within this environmental document, (3) alternatives to the proposed project that were considered, and (4) major areas of controversy and issues to be resolved by decision makers. This summary does not contain the extensive background and analysis found throughout the individual chapters within the EIR. Therefore, the reader should review the entire document to fully understand the proposed project and its environmental consequences.

ES.1 Project Location and Project Site

NUWI Sierra Madre LLC (applicant) is proposing to develop an approximately 17.30-acre site (Assessor's Parcel Number 5761-002-008) located at 700 North Sunnyside Avenue (project site). The project site is located within the northwestern portion of the City of Sierra Madre within Los Angeles County, California. The northwestern portion of the project site borders the City of Pasadena, while the base of the San Gabriel Mountains is located approximately 460 feet north of the project site (see Figure 3-1, Project Location, in Chapter 3, Project Description, of this EIR). Approximately 9.19 acres of the 17.30-acre project site would be developed for single-family residential uses; 3.68 would be developed as roadways; and approximately 3.39 acres of the project site would be developed as open space, which includes a 3.04-acre neighborhood public park. A 1.04-acre grading and landscape buffer would be provided within the northern portion of the site.

The project site is surrounded by the Bailey Canyon and Bailey Canyon Wilderness Park to the east, existing single-family residential development to the south and west, and the Mater Dolorosa Retreat Center, which is primarily used to host religious and silent retreats and other activities, to the north. The Mater Dolorosa Retreat Center currently is on the same legal parcel as the project site, which is currently split within three different lot; however, a lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two lots that make up on legal lot for the project site into one and adjust the site's northern boundary farther to the north. There are currently two access roads that run north to south through the project site to the Mater Dolorosa Retreat Center, including North Sunnyside Avenue, which crosses through the western portions of the site, and Carter Avenue, which extends through the eastern portion of the site. North Sunnyside Avenue would become a public road that would serve the project site and provide access to the Mater Dolorosa Retreat Center, while Carter Avenue would be improved to provide secondary egress and ingress access to the site, as well as internal circulation throughout the project site. An additional access road traverses the northern portion of the site from east to west, from Carter Avenue to North Sunnyside Avenue. The Mater Dolorosa Retreat Center is not a part of the project site, and no changes in use are proposed. Open space areas lie to the north of the Mater Dolorosa Retreat Center. Of this open

space area, approximately 35 acres is proposed to be dedicated as part of the project to the City to be protected open space; however, this open space dedication area is not considered part of the project site.

ES.2 Project Description

The proposed project would include the adoption of The Meadows at Bailey Canyon Specific Plan (Specific Plan), which would establish the zoning and development standards to guide future development of 42 detached single-family residential units and approximately 3.39 acres of open space (including 3.04-acre dedicated neighborhood park), within the 17.30-acre project site. A 1.04-acre grading and landscape buffer would be located within the northern portion of the project site (see Figure 3-2, Conceptual Site Plan, in Chapter 3 of this EIR). In addition to the ministerial lot line adjustment required to consolidate the two lots that make up the project site into one and adjust the site's northern boundary further to the north, the discretionary actions before the City include a proposed General Plan amendment to change the land use designation for the project site from Institutional to Specific Plan, and a zone change to change the zoning of the project site from Institutional to Specific Plan.

Community benefits would include the new public park, net-zero water impact, establishing a dedicated funding source for long-term park maintenance, and the open space dedication.

The project would include reconfiguration of North Sunnyside Avenue and improvement of Carter Avenue, which traverse the project site. Public access for both of these roads currently ends at the Mater Dolorosa Retreat Center's gates at the southern portion of the site. Under the proposed project, access to the project site provided via North Sunnyside Avenue would become public up to the portion of the existing legal parcel to be retained as the Mater Dolorosa Retreat Center. Carter Avenue would serve as secondary access to the proposed project as well as provide internal circulation within the project site.

ES.2.1 Project Objectives

The following are the objectives of the proposed project:

1. Provide for orderly planning and long-range development of the project site to ensure community compatibility with the distinctive small-town character unique to the Sierra Madre community through adoption of a specific plan that establishes zoning and development standards.
2. Ensure new uses are compatible with the existing community by establishing comprehensive development standards and architectural guidelines through adoption of a specific plan that will guide future development.
3. Provide above-moderate income housing, in accordance with the 6th Cycle Regional Housing Needs Assessment (RHNA).
4. Develop a high-quality single-family residential community that is sensitively sited within the existing natural topography of the site and its surroundings and serves to minimize traffic impacts to adjacent streets.
5. Preserve the hillside open space area by dedicating approximately 30 acres north of the Mater Dolorosa Retreat Center to the City, in order to preserve a portion of Colby Canyon and the Colby Canyon Trail, which would be used by wildlife for movement up and down slope; preserve native vegetation communities and drainages; and preserve land adjacent to the Colby Canyon stream.
6. Provide street improvements to facilitate safe and efficient access to the site from North Sunnyside Avenue.

7. Achieve a net-zero impact on local water supplies to minimize burdens on existing City infrastructure and the impact on the environment.
8. Provide public benefits and amenities to the neighboring community, through a development agreement with the City, including a neighborhood public park and enhanced connectivity to the Bailey Canyon Wilderness Park and trail system.

ES.2.2 Discretionary Actions

A discretionary action is an action taken by an agency that calls for the exercise of judgment in deciding whether to approve or how to carry out a project. In addition to the ministerial lot line adjustment required to consolidate the two lots that make up the project site into one and adjust the site's northern boundary further to the north, the proposed project would require consideration of the following discretionary actions by the City:

- Certification of the Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to CEQA
- Approval of amendments to the City of Sierra Madre General Plan including changing the land use designation of the project site from Institutional to Specific Plan
- Approval of amendments to the Zoning Code to change the zoning of the project site from Institutional to Specific Plan
- Approval of amendments to update the City's Zoning and Land Use maps
- Approval of The Meadows Specific Plan
- Approval of the Development Agreement between the Applicant and the City
- Approval of a landscape maintenance district or similar public maintenance entity, for long-term maintenance of the proposed public park

ES.3 Areas of Controversy

Pursuant to Section 15082 of the CEQA Guidelines, the City circulated a Notice of Preparation (NOP) dated June 24, 2020, to begin a 30-day public review and comment period for interested agencies, organizations, and parties to provide comments regarding potential environmental impacts of the project and issues that should be addressed in the EIR. The NOP was also sent to the State Clearinghouse at the California Office of Planning and Research. The State Clearinghouse assigned a state identification number (SCH No. 2020060534) to this EIR.

Comments received during the NOP public comment period were considered during the preparation of this EIR. The NOP and comments are included in Appendix A1 to this EIR. Five comment letters were received in response to the NOP. Comments covered topics including water supply and regulations, biological resources, transportation, and flood control.

In addition, in August of 2020, the City held three workshops related to the proposed project. Over 100 residents participated in the City's workshops related to the proposed project and EIR. The Specific Plan has been prepared to establish comprehensive development standards for the proposed project, to ensure timely and adequate infrastructure, open space, and high-quality design. At all three of the workshops held in August 2020, the EIR was discussed in detail and participants provided comments to the City, which were memorialized and included in the record.

Due to COVID-19 and its related restrictions now easing, and in order to hear from as many residents as possible, the City held an additional in-person informational meeting to discuss the Draft EIR. The City has conducted this meeting to present the EIR process and to receive written public comments and suggestions regarding the scope and content of the EIR. The meeting has been held on Wednesday, July 14, 2021 from 6:00 p.m. – 7:30 p.m. at Memorial Park, located at 222 West Sierra Madre Boulevard. During and after this meeting, 47 comment letters were received, which focused on environmental issue areas such as water supply, traffic/transportation, circulation, loss of open space and natural habitat, wildfire, aesthetics, drought, climate change, zoning and land use designations, drainage and stormwater runoff, biological resources, wildlife, wildlife movement, air quality, public services, geologic hazards, noise, dust, wastewater/sewer system, and alternatives. These environmental issue areas have all been extensively analyzed in this Draft EIR. Public comments received in relation to this meeting have been incorporated into Appendix A2 of this EIR.

ES.4 Issues to Be Resolved by the City Council

The issues to be resolved by the decision-making body are whether to adopt the proposed project and whether the potential significant impacts of the project with respect to air quality, biological resources, cultural resources, geology and soils, land use and planning, noise, and tribal cultural resources have been fully mitigated below a level of significance or if additional measures are required. Lastly, the City would determine whether any alternative might meet the key objectives of the project while reducing its environmental impact.

ES.5 Project Alternatives

Pursuant to the CEQA, Guidelines, EIRs are required to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (14 California Code of Regulations [CCR] Section 15126.6[a]). This EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (CCR Section 15126.6[a]) The consideration of alternatives is required even if the alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (CCR Section 15126.6[b]).

ES.5.1 Alternative 1: No Project/No Build Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project/No Build Alternative (Alternative 1) to be analyzed. Under Alternative 1, no development would occur on the project site. Accordingly, the site characteristics of this alternative would be equivalent to the existing conditions for each category analyzed in Chapter 4, Environmental Analysis, of this EIR.

ES.5.2 Alternative 2: Existing Zoning and Land Use Designation: Communal Residential Facility Alternative

The Existing Zoning and Land Use Designation: Communal Residential Facility Alternative (Alternative 2) assumes development of group homes, developmentally disabled, or senior care facilities, consistent with the existing Institutional zoning and General Plan land use designation of the project site. Therefore, no rezone or General Plan Amendment would be required under this alternative. Alternative 2 would be developed on the same approximately

17.30-acre project site as the proposed project. Based on the 35% maximum lot coverage required by the zoning code, the maximum allowable footprint based on existing zoning would allow for development of approximately 275,000 square feet. This alternative would not include a publicly accessible neighborhood park, which is a component of the proposed project. Carter Avenue would be improved similar to the proposed project and would be used as secondary egress and ingress access to the site. North Sunnyside Avenue would remain a private street under this alternative.

ES.5.3 Alternative 3: Existing Zoning and Land Use Designation: Private School Alternative

The Existing Zoning and Land Use Designation: Private School Alternative (Alternative 3) would include development of a private school, consistent with the existing Institutional zoning and General Plan land use designation of the project site. Therefore, no rezone or General Plan Amendment would be required under this alternative. Based on the 35% lot coverage required by the zoning code, the maximum allowable footprint based on existing zoning would allow for development of approximately 275,000 square feet. No neighborhood park would be developed under this alternative. Carter Avenue would be improved similar to the proposed project and would be used as secondary egress and ingress access to the site. North Sunnyside Avenue would remain a private street under this alternative.

ES.5.4 Alternative 4: Reduced Development/No Park Alternative

The Reduced Development Alternative (Alternative 4) would include development of 34 detached single-family residential units on the same approximately 17.30-acre project site representing an approximately 20% reduction from the proposed project. Alternative 4 would require the same discretionary actions as the proposed project to change the existing Institutional zoning and General Plan land use designation to allow for development of residential uses. Under the proposed project, the proposed public park would be maintained by a landscape maintenance district or similar public maintenance entity. Because of reduced number of units under this alternative, there would not be enough funds to maintain a public park in accordance with City standards. Therefore, Alternative 4 would not include a neighborhood park. Although fewer units would be developed under this alternative, the lot size of each residential unit would be increased. Similar to the proposed project, the Reduced Development Alternative would also result in reconfiguration of North Sunnyside Avenue and improvements to Carter Avenue. Primary access to the project site would be provided by North Sunnyside Avenue, which would be publicly accessible. Carter Avenue would be improved similar to the proposed project and would be used as secondary egress and ingress access to the site.

ES.6 Summary Table

Table ES-1 is a summary of the proposed project's environmental impacts under CEQA, the mitigation measures (MMs) to reduce potentially significant impacts to less than significant, and a determination regarding the level of significance of each potential impact after mitigation.

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Aesthetics			
Would the project have a substantial adverse effect on a scenic vista?	Less than significant	None required	Less than significant
Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Less than significant	None required	Less than significant
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	None required	Less than significant
Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than significant	**PDF-AES-1:** Lighting at the project site shall comply with Section 3.8.6(A.xii) of the Specific Plan, which includes the following development standards: • All lighting of the building, landscaping, parking area, or similar facilities shall be in compliance with the City's Dark Sky Program. • Lighting shall be hooded and directed downward to reflect away from adjoining properties. • Lighting shall be confined to the lot boundaries and not be oriented towards neighboring properties to protect privacy. • Pedestrian-scaled street lighting shall be provided within the proposed park areas pedestrian routes of travel to enable visibility and safety.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation

		In addition, skylights proposed at the project site shall comply with Section 5.5.6 of the Specific Plan, which includes the following architectural design requirements:
		• Skylight materials and elements should be consistent with the selected architectural style and be fully integrated into the roof design.
		• Skylights shall employ the following strategies:
		  ○ Glazing should be clear, flat, or non-reflective.
		  ○ Tubular, domed, or "bubble" skylights shall not be used.
		  ○ Skylights should be mounted on the same plan and angle as the roof.
		To eliminate skyward glare, interior lights should not be oriented upward through skylights.
		PDF-AES-2: Solar panels shall comply with requirements outlined in Section 5.5.6 of the Specific Plan which includes the following, to reduce potential for glare:
		• Solar panels shall include materials and elements that are consistent with the selected architectural style and shall be fully integrated into the roof design.
		• Solar panels shall be oriented to the south to maximize efficiency and establish visual consistency across buildings.
		• Flashing, sheet metal, and framing should be colored to match the roof material.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Would the project have a cumulative effect on aesthetic resources?	Less than significant	**PDF-AES-1** and **PDF-AES-2** (see above)	Less than significant
Agriculture and Forestry Resources			
Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No impact	None required	No impact
Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No impact	None required	No impact
Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No impact	None required	No impact
Would the project result in the loss of forest land or conversion of forest land to non-forest use?	No impact	None required	No impact
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?	No impact	None required	No impact
Would the project have a cumulative effect on agriculture and forestry resources?	No impact	None required	No impact

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Air Quality			
Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than significant	None required	Less than significant
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	**MM-AQ-1:** Prior to the City's issuance of the demolition and grading permits for the Project, the Applicant shall demonstrate to the satisfaction of the Planning Division that its construction contractor will use a construction fleet wherein all 50-horsepower or greater diesel-powered equipment is powered with California Air Resources Board (CARB)-certified Tier 4 Interim engines or equipment outfitted with CARB verified diesel particulate filters. An exemption from this requirement may be granted if: (1) the Applicant documents equipment with Tier 4 Interim engines are not reasonably available, and (2) functionally equivalent diesel PM emission totals can be achieved for the project from other combinations of construction equipment (Tier 3 with level 3 diesel particulate filter, electric, compressed natural gas, hydrogen, etc.). For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded to a Tier 4 Final or replaced with an alternative-fueled (not diesel-fueled) equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards. Before an exemption may be granted, the Applicant's construction contractor shall: (1) demonstrate that at least two construction fleet owners/operators in Los Angeles County were contacted and that those owners/operators confirmed	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		Tier 4 Interim equipment could not be located within Los Angeles County during the desired construction schedule; and (2) the proposed replacement equipment has been evaluated using the California Emissions Estimator Model (CalEEMod) or other industry standard emission estimation method, and documentation provided to the Planning Division confirms that necessary project-generated functional equivalencies in the diesel PM emissions level are achieved.	
Would the project expose sensitive receptors to substantial pollutant concentrations?	Potentially significant	**MM-AQ-1.** (see above)	Less than significant
Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on air quality resources?	Less than significant	None required	Less than significant
Biological Resources			
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?	Potentially significant impacts to nesting birds if vegetation clearing is undertaken during the breeding season	**MM-BIO-1: Nesting Bird Avoidance.** Initiation of construction activities (i.e., initial vegetation clearing) should avoid the migratory bird nesting season (February 1 through August 31), to reduce any potential significant impact to birds that may be nesting on the project site. If construction activities must be initiated during the migratory bird-nesting season, an avian nesting survey of the project site and contiguous habitat within 500 feet of all impact areas must be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a qualified wildlife biologist within 72 hours prior to the start of construction in accordance with the MBTA and California Fish and Game Code.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no disturbance buffer, which shall be determined by the biologist based on the species' sensitivity to disturbance (typically 50 feet for common, urban-adapted species, 300 feet for other passerine species, and 500 feet for raptors and special-status species). The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing. A qualified biologist (with the ability to stop work) shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests occur.	
Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Potentially significant	**MM-BIO-2: Invasive Species.** The use of invasive plant species listed in the California Invasive Plant Council's Inventory as having a rating of Limited, Moderate, or High shall not be allowed for landscaping purposes.	Less than significant
Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Potentially significant	**MM-BIO-2** (see above)	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
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?	Potentially significant impacts to nesting birds if vegetation clearing is undertaken during the breeding season	**MM-BIO-1** (see above)	Less than significant
Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Removal of 10 protected trees on-site, the project would result in potentially significant impacts	**MM-BIO-3: Protected Tree Replacement**. The City's Tree Preservation and Protection Ordinance (Chapter 12.20) identifies tree replacement requirements for tree removal associated with a development project. In total, ten protected trees may be removed. As such, they shall be replaced at a minimum with a 24-inch box tree, on a 1:1 basis with a like species. The specific location of individual mitigation tree plantings on site would be addressed in the mitigation planting plan or landscape design plan prepared for the site. In addition, all mitigation tree plantings shall be subject to a 5-year monitoring effort by an independent third-party certified arborist. The monitoring effort shall consider growth, health, and condition of the subject trees to evaluate success. The monitoring effort may result in a recommendation of remedial actions should any of the tree plantings exhibit poor or declining health.	Less than significant
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?	No impact	None required	No impact
Would the project have a cumulative effect on biological resources?	Less than significant	None required	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Cultural Resources			
Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	Less than significant	None required	Less than significant
Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Potentially significant impacts to previously undiscovered archaeological resources	**MM-CUL-1: Workers Environmental Awareness Program.** All construction personnel and monitors who are not trained archaeologists shall be briefed regarding unanticipated discoveries prior to the start of ground disturbing activities. A basic presentation shall be prepared and presented by a qualified archaeologist to inform all personnel working on the project about the archaeological sensitivity of the area. The purpose of the WEAP training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also be instructed on the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the on-call archaeologist and if appropriate, Tribal representative. Necessity of training attendance should be stated on all project site plans intended for use by those conducting the ground disturbing activities. **MM-CUL-2: On-Call Archaeological Construction Monitoring.** A qualified archaeologist shall be retained and on-call to respond and address any inadvertent discoveries identified during ground disturbing activities. A qualified archaeological	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust all monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material as well as determine, for purposes of Native American monitoring, when initial ground disturbing activities are complete. The archaeological monitor shall be responsible for maintaining daily monitoring logs for those days monitoring is required. If monitoring is ultimately required, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance. This report shall document compliance with approved mitigation and all monitoring efforts as well as include an appendix with copies of all daily monitoring logs. The final report shall be submitted to the South Central Coastal Information Center (SCCIC). **Unanticipated Discovery of Archaeological Resources.** In the event that potential archaeological resources (sites, features, or artifacts) are exposed during construction activities involving ground disturbance for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist can evaluate the significance of the find and determine whether additional study is warranted. This avoidance buffer may be adjusted following inspection of this area by the qualified archaeologist. Depending upon the significance of the find under CEQA (14 CCR 15064.5[f]; PRC Section 21082), the archaeologist	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.	
Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	Potentially significant impacts to unanticipated discovery of human remains	**MM-CUL-4 Unanticipated Discovery of Human Remains.** In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete his/her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Would the project have a cumulative effect on cultural resources?	Potentially significant impacts to previously undiscovered archaeological resources and unanticipated discovery of human remains	**MM-CUL-1, MM-CUL-2, MM-CUL-3,** and **MM-CUL-4** (see above)	Less than significant
Energy			
Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	None required	Less than significant
Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on energy resources?	Less than significant	None required	Less than significant
Geology and Soils			
Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			
a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	Less than significant	**PDF-GEO-1. Ground Shaking and Seismic Design Criteria.** During the design phase of the proposed development on site, the project shall comply with the Earthquake Design Regulations of Chapter 16, Section 1613 of the California Building Code (CBC) 2019. Based on the mapped values, the coefficients and factors apply to the lateral-force design for the proposed structures at the site are outlined in Appendix E, Geotechnical Investigation. Terrace deposits are at grade and Class D is recommended.	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		PDF-GEO-2. Grading. Grading of the site will consist of cut and fill operations to create building pads and associated streets. Grading shall involve the removal and recompaction or artificial fill and loose terrace deposits (see **MM-GEO-1**) in addition of mass-excavation of the project site. The following shall be incorporated during grading activities: • Monitoring: All earthwork, including clearing, site preparation, and fill replacement, shall be conducted with engineering control, under observation and testing by the geotechnical engineer and in accordance with the requirements of a site-specific geologic and geotechnical engineering report. **PDF-GEO-3. Site Preparation.** The following shall be incorporated during site preparation activities: • Existing Structure Location: The general contractor shall locate all surface and subsurface structure on the site or on the approved grading plan prior to preparing the ground. • Existing Structural Removal: Any underground structures, including septic tanks, wells, pipelines, foundations, utilities, that have not been located prior to grading shall be removed or treated in a manner recommended by the Geotechnical Engineer. • Clearing and Stripping: The construction areas shall be cleared and stripped of all vegetation, trees, bushes, sod, topsoil, artificial fill, debris, asphalt, concrete and other deleterious material prior to fill placement.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		• Removals: Removals of suitable soil shall be performed on the site in accordance with the soils report. • Subgrade Preparation: Subgrade for foundations, pavement areas, overexcavations, and for those areas receiving any additional fill be prepared by scarifying the upper 12 inches and moisture conditioning, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum. The scarified areas shall be compacted to at least 90 percent of the maximum laboratory density, as determined by ASTM D-1557-12 compaction method. All areas to receive fill should be observed by the Geotechnical Engineer prior to fill placement. • Subgrade Inspection: Prior to placing fill, the ground surface to receive fill should be observed, tested, and approved by the Geotechnical Engineer. **PDF-GEO-4. Fill Placement.** • Laboratory Testing: Representative samples of materials to be utilized as compacted fill shall be analyzed in a laboratory to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material should be conducted. • On-Site Fill Material: The on-site soils are adequate for re-use in controlled fills provided the soils do not contain any organic matter, debris, or any individual particles greater than 12 inches in diameter.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		• Rock Fragments: Rock fragments less than 12 inches in diameter may be utilized in the fill, provided they are not placed in concentrated pockets, surrounded with fine grained material, and the distribution of the rocks is supervised by the Geotechnical Engineer. Any rock fragments over 6 inches should be kept below a depth of 5 feet. Rocks greater than 12 inches in diameter should be taken off-site, placed in fill areas designated as suitable for rock disposal, or placed in accordance with the recommendations of the Geotechnical Engineer. • Subgrade Verification and Compaction Testing: Regardless of material or location, all fill material should be placed over properly compacted subgrades in accordance with the Site Preparation section of Appendix E, Geotechnical Investigation, of this EIR. The condition of all subgrades shall be verified by the Geotechnical Engineer before fill placement or earthwork grading begins. Earthwork monitoring and field density testing shall be performed during grading to provide a basis for opinions concerning the degree of soil compaction attained. • Fill Placement: Approved on-site material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material should be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum moisture content. The	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		fill shall be placed and compacted in horizontal layers, unless otherwise recommended by the geotechnical engineer. • Compaction Criteria - Shallow Fills: For fills less than 40 feet in vertical thickness, each layer shall be compacted to at least 90 percent of the maximum laboratory density for material used as determined by ASTM D-1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the fill material is in accordance with the requirements of the Geotechnical Engineer. • Fill Material - Moisture Content: All fill material placed shall be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent. If excessive moisture in the fill results in failing results or an unacceptable pumping condition, then the fill shall be allowed to dry until the moisture content is within the necessary range to meet the required compaction requirements or reworked until acceptable conditions are obtained. • Keying and Benching: All fills should be keyed and benched through all topsoil, slopewash, alluvium or colluvium or creep material, into sound terrace deposits or firm material where the slope receiving fill is steeper than 5:1 (Horizontal: Vertical) or as determined by geotechnical engineer. The standard acceptable	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		bench height is four feet into suitable material. The key for side hill fills shall be a minimum of 15 feet within firm materials, with a minimum toe embankment of 2 feet into firm material, unless otherwise specified by the geotechnical engineer. • Drainage Devices: Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, or with the recommendations of the Geotechnical Engineer and Engineering Geologist. • Cut-Fill Transition: Where a cut-fill transition is present beneath planned structures, the cut area shall be overexcavated three feet below the bottom of proposed footings and the excavated material shall be replaced as compacted fill to reduce the transition condition. These guidelines shall also be followed in areas where lots are underlain by soils or rock with differential expansion potential and also for lots located above descending buttress and stabilization fills. **PDF-GEO-5. Grading Control.** Grading control activities shall comply with the following: • Grading Inspection: Earthwork monitoring and field density testing shall be performed by the Geotechnical Engineer during grading to provide a basis for opinions concerning the degree of soil compaction attained. The Contractor shall receive a copy of the geotechnical engineer's Daily Field Engineering Report, which shall indicate the results of field density tests for that	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		day. Where failing tests occur or other field problems arise, the contractor shall be notified of such conditions by written communication from the geotechnical engineer in the form of a conference memorandum, to avoid any misunderstanding arising from oral communication. • Subgrade Inspection: All processed ground to receive fill and overexcavations should be inspected and approved by the Geotechnical Engineer prior to placing any fill. The contractor should be responsible for notifying the geotechnical engineer when such areas are ready for inspection. Inspection of the subgrade may also be required by the controlling governmental agency within the respective jurisdictions. • Subgrade Testing: Density tests shall also be made on the prepared subgrade to receive fill, as required by the Geotechnical Engineer. • Density Testing Intervals: In general, density tests shall be conducted at minimum intervals of 2 feet of fill height or every 500 cubic yards. Due to the variability that can occur in fill placement and different fill material characteristics, a higher number of density tests may be warranted to verify that the required compaction is being achieved. **PDF-GEO-6. Cut Slopes.** Cut slope activities shall comply with the following: • Gradient: All cut slopes shall be designed at a gradient of 2:1 or less.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		• Observation: The Engineering Geologist shall observe all cut slopes excavated in rock, lithified or formation material at vertical intervals not exceeding ten feet. • Change of Conditions: If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or faults planes, or areas of unstable material are encountered during grading, these conditions shall be analyzed by the engineering geologist and geotechnical engineer, and recommendations shall be made to treat these problems. • Protection: Cut slopes that face in the same direction as the prevailing drainage shall be protected from slopewash by a non-erosive interceptor swale placed at the top of the slope. • Criteria: Unless otherwise specified in the geotechnical and geological report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies. • Drainage Devices: Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the geotechnical engineer or engineering geologist. **PDF-GEO-7. Fill Slopes.** Fill slopes activities shall comply with the following: • Gradient: All fill slopes shall be designed at a gradient of 2:1 or less.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		• Slope Face - Compaction Criteria: The contractor shall be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses and stabilization fills. This may be achieved by overbuilding the slope a minimum of five feet, and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction. If the method of achieving the required slope compaction selected by the contractor fails to produce the necessary results, the contractor should rework or rebuild such slopes until the required degree of compaction is obtained. Slope testing shall include testing the outer six inches to three feet of the slope face during and after placement of the fill. In addition, during grading, density tests will be taken periodically on the flat surface of the fill three to five feet horizontally from the face of the slope. • Slope Face - Vegetation: All fill slopes shall be planted or protected from erosion by methods specified in the geotechnical report, or required by the controlling governmental agency. **PDF-GEO-8. Utility Trenching and Backfill.** Utility trenching and backfill activities shall comply with the following: • Utility Trenching: Open excavations and excavations that are shored shall conform to all applicable Federal, State and local regulations. • Backfill Placement: Approved on-site or imported fill material shall be evenly placed,	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material shall be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum moisture content. The fill shall be placed and compacted on a horizontal plane, unless otherwise recommended by the geotechnical engineer. • Backfill Compaction Criteria: Each layer of utility trench backfill shall be compacted to at least 90 percent of the maximum laboratory density determined by ASTM D- 1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the compaction criteria is reached. • Exterior Trenches Adjacent to Footings: Exterior trenches, paralleling a footing and extending below a 1H:1V plane projected from the outside bottom edge of the footing, shall be compacted to 90 percent of the laboratory standard. Sand backfill, unless it is similar to the in-place fill, shall not be allowed in these trench backfill areas. Density testing, along with probing, should be accomplished to verify the desired results. • Pipe Bedding: We recommend that a minimum of 6 inches of bedding material shall be placed	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		in the bottom of the utility trench. All bedding materials shall extend at least 4 inches above the top of utilities which require protection during subsequent trench backfilling. All trenches shall be wide enough to allow for compaction around the haunches of the pipe. • Groundwater Migration: Backfilled utility trenches may act as French drains to some extent, and considerable groundwater flow along utility bedding and backfill shall be expected. Wherever buried utilities, or structures which they may intersect, could be adversely affected by such drainage, provisions shall be made to collect groundwater migrating along the trench lines. These situations include where buried utilities enter buildings, particularly where they enter below grade mechanical rooms, and where buried utilities enter junction boxes or switching stations that are intended to remain dry. Measures that remedy this include, but are not limited to, placement of perforated drain pipes below and continuous with bedding materials, and placement of seepage barriers such as lean mix concrete or controlled density fill (CDF). **PDF-GEO-9. Construction Considerations.** Construction activities shall comply with the following: • Erosion Control: Erosion control measures, when necessary, shall be provided by the contractor during grading and prior to the completion and construction of permanent drainage controls.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		• Compaction Equipment: It is also the contractor's responsibility to have suitable and sufficient compaction equipment on the project site to handle the amount of fill being placed and the type of fill material to be compacted. If necessary, excavation equipment shall be shut down to permit completion of compaction in accordance with the recommendations contained herein. Sufficient watering devices/equipment shall also be provided by the contractor to achieve optimum moisture content in the fill material. • Final Grading Considerations: Care shall be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property. **PDF-GEO-10. Temporary Excavations.** Where the necessary space is available, temporary unsurcharged embankments may be slope back without shoring. The slope should not be cut steeper than 5 feet and below at near vertical temporary gradient, and above 5 feet at a 1:1 temporary gradient. In areas where soils with little or no binder are encountered, shoring or flatter excavation slopes shall be made. The recommended temporary excavation slopes do not preclude local raveling or sloughing. Where sloped embankments are used, the top of the slope should be barricaded to prevent equipment and heavy storage loads within five feet of the top of the slope. If the temporary construction embankments are to be maintained for long periods, berms should be constructed along the top	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		of the slope to prevent runoff water from eroding the slope faces. The soils exposed in the temporary backcut slopes during excavation shall be observed by qualified personnel so that modifications of the slopes can be made if variations in the soil conditions occur. On-site grading should not undermine support of existing offsite improvements. **PDF-GEO-11. Drainage/Landscape Maintenance.** The southern area of the site, where the proposed park would be located, may be used for stormwater infiltration. The site is underlain by mostly sandy soil, which have acceptable infiltration rates. However, additional subsurface exploration and infiltration testing shall be required in this area to determine the actual soil infiltration rates for design purposes of the system used. Any infiltration systems shall be setback a sufficient distance from proposed structures and adjacent properties to avoid adverse impacts. These distances shall be determined with future studies. In areas of residential development, water shall not be allowed to pond or seep into the ground, or flow over slopes in a concentrated manner. Roof gutters and yard drains shall be provided. Pad drainage shall be directed toward the street or any approved watercourse area swale via non-erosive channel, pipe and/or dispersion devices. In addition to control of landscape watering, pad drainage shall slope away from structures. **PDF-GEO-12. Conventional Foundation Recommendations.** Appendix E includes recommendations for foundation design, including bearing subgrades, subgrade verification, footing	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		depth and width, and bearing pressures, provided for preliminary design purposes and the final expansion index shall be determined following grading. Conventional or post-tensioned foundations shall be used to support the proposed structures. All footings should meet current slope setback requirements. Foundations shall be designed for low expansive soil conditions. The proposed project shall comply with conventional foundation design, as outlined in the final design of the project. **PDF-GEO-13. General Recommendations.** The project shall comply with the following general recommendations: 1. Drainage and Site Maintenance: All slab foundation areas shall be moisture conditioned to at least optimum moisture, but no more than 5 percent above optimum moisture for a depth of at least 12 inches below subgrade for low expansion index soil. The post-tensioned slab designer shall determine if the moisture penetration is sufficient for this design. The subgrade soil moisture shall be observed by a soil engineer or his/her representative prior to pouring concrete. It is suggested the above stated moisture be obtained and maintained at least a suggested 2 days prior to pouring concrete. 2. A 10-mil Visqueen vapor barrier shall be placed underneath habitable area slabs and/or slabs with floor coverings. This barrier can be placed directly on the subgrade soils, but should be overlain by a two-inch layer of imported sand. This vapor barrier shall be lapped and sealed	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		(especially around the utility perforations) adequately to provide a continuous waterproof barrier under the entire slab. 3. Surface water shall be kept from infiltrating into the subgrade adjacent to the house foundation system. This may include, but not be limited to rain water, roof water, landscape water and/or leaky plumbing. The lots are to be fine graded at the completion of construction to include positive drainage away from the structure and roof water will be collected via gutters, downspouts, and transported to the street in buried drain pipes. Homebuyers should be cautioned against constructing open draining planters adjacent to the houses, or obstructing the yard drainage in any way. 4. Utility trenches beneath the slabs shall be backfilled with compacted native soil materials, free of rocks. 5. Subgrade soil beneath footings and slabs should be premoistened prior to placement of concrete. 6. Standard County of Los Angeles structural setback guidelines are applicable, except where superseded by specific recommendations by the project geologist and geotechnical engineer. 7. Building or structure footings shall be set back a horizontal distance, consistent with the requirements of Appendix E. 8. Prior to placing concrete in the footing excavations, an inspection shall be made by our representative to ensure that the footings are free of loose and disturbed soils and are embedded in the recommended material.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		PDF-GEO-14. Retaining Walls. Retaining wall footings should be founded into compacted fill or dense terrace deposits. The near surface on site soils have a low expansion index and should be confirmed prior to foundation construction. The equivalent fluid pressures recommended are based on the assumption of a uniform backfill and no build-up of hydrostatic pressure behind the wall. To prevent the build-up of lateral soil pressures in excess of the recommended design pressures, over compaction of the fill behind the wall should be avoided. This can be accomplished by placement of the backfill above a 45-degree plane projected upward from the base of the wall, in lifts not exceeding eight inches in loose depth, and compacting with a hand-operated or small, self- propelled vibrating plates. 1. **Conventional (Yielding) Retaining Walls.** All recommendations for active lateral earth pressures contained herein assume that the anticipated retaining structures are in tight contact with the fill soil (or dense alluvium) that they are supposed to support. The earth support system must be sufficiently stiff to hold horizontal movements in the soil to less than one percent of the height of the vertical face, but should be free-standing to the point that they yield at the top at least 0.1 percent of the height of the wall. 2. **Earth Pressures on Conventional (Yielding) Retaining Walls.** The earth pressures on walls retaining permeable material, compacted fill, or natural soil shall be assumed equal to that exerted by an equivalent fluid with densities consistent with those listed in Appendix E.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		3. **Restrained (Non-Yielding) Walls.** Restrained (Non-Yielding) Walls shall be constructed consistent with ASTM D-1557-12, and the requirements of Appendix E. 4. **Seismic Pressures for Retaining Walls.** Seismic Pressures for Retaining Walls shall be constructed consistent with the requirements of Appendix E. **PDF-GEO-15. General Recommendations for Retaining Walls.** The following general recommendations shall be implemented for construction of retaining walls: • Any anticipated superimposed loading, such as upper retaining walls, other structures, within a 45-degree projection upward from the wall bottom, except retained earth, shall be considered as surcharge and provided in the design. • A vertical component equal to one-third of the horizontal force so obtained may be assumed at the application of force. • The depth of the retained earth shall be the vertical distance below the ground surface, measured at the wall face for stem design or measured at the heel of the footing for overturning and sliding. • The walls shall be constructed with weep holes near the bottom, on five-foot centers or with perforated drainpipe in a gravel envelope at the bottom and behind the wall. A one-foot thick zone of clean granular, free-draining material should be placed behind the wall to within three feet of the surface. On-site soil may be used for the remainder of the backfill and should be	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		compacted to 90 percent relative compaction as determined by ASTM Test Designation D-1557-12. • A concrete-lined swale is recommended behind retaining walls that can intercept surface runoff from upslope areas. The surface runoff shall be transferred to an approved drainage channel via non-erosive drainage devices.	
b. Strong seismic ground shaking?	Less than significant	**PDF-GEO-1** through **PDF-GEO-15** (see above)	Less than significant
c. Seismic related ground failure including liquefaction?	Potentially significant to seismic-related ground failure due to presence of artificial fill	**MM-GEO-1: Removal and Recompaction of Artificial Soil.** Prior to the commencement of any construction activity on site, the project contractor shall remove and recompact all artificial soil present within the limits of proposed grading, as deep as 18 feet bgs, **PDF-GEO-1** through **PDF-GEO-15** (see above)	Less than significant
d. Landslides?	Less than significant	None required	Less than significant
Would the project result in substantial soil erosion or the loss of topsoil?	Less than significant	**PDF-GEO-7** through **PDF-GEO-9** (see above)	Less than significant
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?	Potentially significant to unstable soils due to presence of artificial fill	**PDF-GEO-1** through **PDF-GEO-15** and **MM-GEO-1** (see above)	Less than significant
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	**PDF-GEO-12** (see above)	Less than significant

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Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No impact	None required	No impact
Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Potentially significant impacts to any unique paleontological resources	**MM-GEO-2: Paleontological Monitoring and Resource Treatment**. Prior to the commencement of any grading activity on site, the project Applicant shall retain a Qualified Paleontologist meeting he Society of Vertebrate Paleontology (SVP) standards and guidelines, subject to the review and approval of the City's Planning Department. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology. The Qualified Paleontologist shall attend the pre-construction meeting and their representative, the Qualified Monitor, shall be on site during all rough grading and other significant ground-disturbing activities at depths greater than 5 feet below the ground surface. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the Qualified Monitor shall temporarily halt and /or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the Qualified Monitor shall remove the rope and allow grading to recommence in the area of the find.	Less than significant
Would the project have a cumulative effect on geology and soils resources?	Potentially significant impacts to any unique paleontological resources	**PDF-GEO-1** through **PDF-GEO-15** and **MM-GEO-1** and **MM-GEO-2** (see above)	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Greenhouse Gas Emissions			
Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant	None required	Less than significant
Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on greenhouse gas emissions?	Less than significant	None required	Less than significant
Hazards and Hazardous Materials			
Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than significant	None required	Less than significant
Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less than significant	None required	Less than significant
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?	No impact	None required	No impact
Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Less than significant	None required	Less than significant

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For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No impact	None required	No impact
Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than significant	**PDF-WF-1** (see below)	Less than significant
Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	Less than significant	**PDF-WF-1** (see below)	Less than significant
Would the project have a cumulative effect on hazards or hazardous materials?	Less than significant	**PDF-WF-1** (see below)	Less than significant
Hydrology and Water Quality			
Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less than significant	None required	Less than significant
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	**PDF-UTL-1.** (see below)	Less than significant
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:	Less than significant	None required	Less than significant
a. result in substantial erosion or siltation on or off site;	Less than significant	**PDF-GEO-7** and **PDF-GEO-9** (see above)	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;	Less than significant	None required	Less than significant
c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Less than significant	None required	Less than significant
d. impede or redirect flood flows?	Less than significant	None required	Less than significant
In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?	Less than significant	None required	Less than significant
Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on hydrology or water quality resources?	Less than significant	**PDF-GEO-7** and **PDF-GEO-9** (see above)	Less than significant
Land Use and Planning			
Would the project physically divide an established community?	Less than significant	None required	Less than significant
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?	Potentially significant	**MM-BIO-3** (see above)	Less than significant
Would the project have a cumulative effect on land use resources?	Less than significant	**MM-BIO-3** (see above)	Less than significant

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Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Mineral Resources			
Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	Less than significant	None required	Less than significant
Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on mineral resources?	Less than significant	None required	Less than significant
Noise			
Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Potentially significant temporary noise impact during construction activities when construction takes place near the project boundaries and potentially significant operational noise impact**s** from HVAC noise, depending upon the noise emission level of the selected residential HVAC systems.	**MM-NOI-1:** The City and/or their Construction Contractor shall implement the following noise reduction measures during all construction activities: • A temporary noise barrier shall be constructed along the project site's southern and western boundaries. The construction noise barrier shall be a minimum of 8 feet in height. The barrier may be constructed of 3/4-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility having a surface weight of 2 pounds per square foot or greater. Alternatively, prefabricated acoustic barriers are available from various vendors. When barrier units are joined together, the mating surfaces of the barrier sides should be flush or overlap with one another. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, should be closed with material	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		that will completely fill the gaps, and be dense enough to attenuate noise. • Construction noise reduction methods such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, and, where feasible, use of electric air compressors and similar power tools, rather than diesel equipment, shall be employed. • Equip all construction equipment (fixed or mobile) with properly operating and maintained mufflers, consistent with or exceeding manufacturers' standards. • Ensure that construction equipment engine enclosures and covers as provided by manufacturers shall be in place during operation. • Place all stationary construction equipment so that the equipment is as far as feasible from noise-sensitive receptors and so that the emitted noise is directed away from the noise-sensitive receptors. • Locate equipment and materials staging in areas that will create the greatest distance between staging area noise sources and noise-sensitive receptors during project construction. • Ensure that construction equipment is shut down when not in use. • Limit haul truck deliveries to the same hours specified for the operation of construction equipment. **MM-NOI-2:**In order to ensure that the proposed projects' HVAC systems do not result in an exceedance of applicable noise standards (i.e., an	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		increase of more than 6 dBA in the City of Sierra Madre), the HVAC system for each residence shall have a maximum noise level specification not to exceed 72 dBA sound power level (equivalent to a sound pressure level of 47 dBA at a measured distance of 25 feet (7.6 meters) over a reflecting plane.	
Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	None required	Less than significant
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?	No impact	None required	No impact
Would the project have a cumulative effect on noise resources?	Potentially significant temporary noise impact during construction activities when construction takes place near the project boundaries and potentially significant operational noise impact**s** from HVAC noise, depending upon the noise emission level of the selected residential HVAC systems.	**MM-NOI-1** and **MM-NOI-2** (see above)	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Population and Housing			
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	None required	Less than significant
Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No impact	None required	No impact
Would the project have a cumulative effect on housing and/or population resources?	Less than significant	None required	Less than significant
Public Services			
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 any of the public services:			
Fire protection?	Less than significant	None required	Less than significant
Police protection?	Less than significant	None required	Less than significant
Schools?	Less than significant	None required	Less than significant
Parks?	Less than significant	None required	Less than significant
Other public facilities?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on public services resources?	Less than significant	None required	Less than significant
Recreation			
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less than significant	None required	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
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	None required	Less than significant
Would the project have a cumulative effect on recreation resources?	Less than significant	None required	Less than significant
Transportation			
Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	Less than significant	None required	Less than significant
Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less than significant	None required	Less than significant
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)?	Less than significant	None required	Less than significant
Would the project result in inadequate emergency access?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on transportation resources?	Less than significant	None required	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Tribal Cultural Resources			
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. 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)?	Potentially significant impacts to previously undiscovered tribal cultural resources	**MM-TCR-1 Native American Monitoring.** Prior to the commencement of any ground disturbing activity at the Project site, the project applicant shall retain a Native American Monitor approved by the Gabrieleño Band of Mission Indians-Kizh Nation (Consulting Tribe on this project pursuant to Assembly Bill A52). A copy of the executed contract shall be submitted to the City of Sierra Madre Planning and Building Department prior to the issuance of any permit necessary to commence a ground-disturbing activity. The Tribal monitor will only be present on-site during the construction phases that involve initial ground-disturbing activities. Initial ground-disturbing activities is defined as initial mass grading and associated movement of sediments from their place of last deposition prior to commencement of the Project. (Initial ground disturbing activities does not include site preparation, grubbing, clearing, potholing, surveying, auguring, or tree removals.) As it pertains	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		to Native American monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by Project-related construction. The Tribal Monitor will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the qualified archaeologist has determined that all initial ground-disturbing activities on the Project Site (as defined above) are completed, or when the qualified archaeologist and Tribal Representatives/Monitor have indicated that all upcoming ground-disturbing activities at the Project Site have little to no potential for impacting Tribal Cultural Resources (whichever defined threshold is met first). Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find and a buffer of 100 feet will be established where no ground disturbing work will be allowed to occur until the find can be assessed and if required, treated according to CEQA requirements. All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist retained on-call and Tribal monitor approved by the Consulting Tribe. If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
		educational, cultural and/or historic purposes. If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease within 100 feet of the find and suspected extent of human remains as determined by the qualified archaeologist retained on-call and Tribal monitor approved by the Consulting Tribe. The county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2). Work may continue on other parts of the Project Site (outside the 100-foot buffer) while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]).	
b. 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?	Potentially significant impacts to previously undiscovered tribal cultural resources	**MM-TCR-1** (see above)	Less than significant
Would the project have a cumulative effect on tribal cultural resources?	Potentially significant impacts to previously undiscovered tribal cultural resources	**MM-TCR-1** (see above)	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Utilities and Service Systems			
Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less than significant	**PDF-UTL-1.** Prior to issuance of a building unit, the project applicant will provide funds to the City to purchase supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD) in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period. This purchase would be in addition to the City's existing agreement with SGVMWD providing for the purchase of supplemental imported water.	Less than significant
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	**PDF-UTL-1** (see above)	Less than significant
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	None required	Less than significant
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	None required	Less than significant
Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than significant	None required	Less than significant
Would the project have a cumulative effect on utilities and/or service systems resources?	Less than significant	**PDF-UTL-1** (see above)	Less than significant

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measures (MMs) and Project Design Features (PDFs)	Level of Significance After Mitigation
Wildfire			
Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than significant	**PDF-WF-1.** The proposed project shall comply with the requirements outlined in the Fire Protection Plan (FPP) (Appendix F2) during construction and operations.	Less than significant
Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than significant	**PDF-WF-1.** (see above)	Less than significant
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?	Less than significant	**PDF-WF-1** (see above)	Less than significant
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	None required	Less than significant
Would the project have a cumulative effect on wildfire?	Less than significant	**PDF-WF-1**	Less than significant

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1 Introduction

This chapter of the Environmental Impact Report (EIR) describes the purpose, scope, and legislative authority of the EIR, the intent of the California Environmental Quality Act (CEQA) and other pertinent environmental rules and regulations, and the environmental review process. The chapter also describes the structure, required contents, and intended uses of the EIR by the City of Sierra Madre (City) and other potential responsible or trustee agencies.

1.1 Project Purpose and Background

This EIR addresses the environmental effects associated with adoption of the proposed The Meadows at Bailey Canyon Specific Plan Project (project or proposed project). Implementation of the project requires a City of Sierra Madre General Plan Amendment to change the land use designation for the project site from Industrial to Specific Plan; a zone change for the project site from Industrial to Specific Plan; an amendment to the General Plan land use map and zoning map; approval of The Meadows at Bailey Canyon Specific Plan (Specific Plan); approval of a Development Agreement between NUWI Sierra Madre LLC (the applicant) and the City of Sierra Madre; and approval of a landscape maintenance district or similar public maintenance entity for long-term maintenance of the proposed public park. The proposed Specific Plan is available for review online at the following location:

- https://www.cityofsierramadre.com/cityhall/city_manager_s_office/transparency

The Mater Dolorosa Retreat Center currently is on the same legal parcel as the project site, which is currently split within three different lots. A lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two lots that make up on legal lot for the project site into one and adjust the site's northern boundary further to the north. The General Plan amendment, zone change, and Specific Plan will only apply to the parcel on which the project will be developed and will have no effect on the Mater Dolorosa Retreat Center lot. Future actions would include the processing of a tentative map to subdivide the project site into 42 residential lots and open space lots for the neighborhood park, and potentially a parcel map to create a separate lot for the approximately 30-acre hillside open space area proposed to be dedicated to the City of Sierra Madre, pursuant to a development agreement to be entered into between the City and the Applicant.

This EIR was prepared in accordance with CEQA (Public Resources Code, Section 21000 et seq.), the CEQA Guidelines (14 CCR Section 15000 et seq.), and the City's environmental review procedures. The City is the lead agency for the EIR and processing of the project.

This EIR provides decision makers, public agencies, and the public with detailed information about the potential for significant adverse environmental impacts to occur as a result of the proposed project. Similarly, responsible agencies will use this EIR to fulfill their legal authority associated with permits issued for the project. The analysis and findings in this document reflect the independent judgment of the City.

1.2 Scope of the Environmental Impact Report

Pursuant to Section 15161 of the CEQA Guidelines, this document was prepared as a "project EIR" and is "focused primarily on the changes in the environment that would result from the development" (i.e., the build out of the proposed project). Where environmental impacts have been determined to be potentially significant, this EIR

presents mitigation measures directed at reducing those adverse environmental effects. The development of mitigation measures provides the lead agency with ways to substantially lessen or avoid the significant effects of the project on the environment, to the degree feasible. Alternatives to the proposed project are presented to evaluate whether there are alternative development scenarios that can further minimize or avoid significant impacts associated with the project.

1.3 Environmental Procedures

1.3.1 California Environmental Quality Act Compliance

The California Public Resources Code (Section 21000 et seq.) requires the preparation and certification of an EIR for any project that a lead agency determines may have a significant effect on the environment. This EIR has been prepared in compliance with all criteria, standards, and procedures of CEQA and the CEQA Guidelines (14 CCR Section 15000 et seq.).

1.3.2 Notice of Preparation and Scoping

CEQA establishes mechanisms whereby the public and decision makers can be informed about the nature of a proposed project and the extent and types of impacts that the project and its alternatives would have on the environment, should the project or alternatives be implemented. Pursuant to Section 15082 of the CEQA Guidelines, the City circulated a Notice of Preparation (NOP) dated June 24, 2020, to interested agencies, organizations, and parties which began a 30-day public comment period on the scope of the EIR. The NOP was also sent to the State Clearinghouse at the California Office of Planning and Research. The State Clearinghouse assigned a state identification number (SCH No. 2020060534) to this EIR.

The NOP is intended to encourage early consultation regarding the proposed action so that agencies, organizations, and individuals are afforded an opportunity to respond with specific comments and/or questions regarding the scope and content of the EIR.

Comments received during the NOP public comment period were considered during the preparation of this EIR. The NOP and comments are included in Appendix A1 to this EIR. Five comment letters were received in response to the NOP. Comments covered topics including water supply and regulations; biological resources; transportation; and flood control. Table 1-1 outlines these comment letters and concerns outlined.

Table 1-1. Notice of Preparation Comment Letters

Commenter	Date Received	General Comments
Caltrans	July 6, 2020	Vehicle miles traveled and greenhouse gases, Caltrans permits for transportation of heavy construction equipment or materials.
Native American Heritage Commission	June 30, 2020	Assembly Bill 52, Senate Bill 18, and Native American consultation, discussion of impacts and appropriate mitigation for tribal cultural resources.
State Water Resources Control Board	July 6, 2020	Compliance with regulations for potable and recycled water as well as for separation of water mains and conveyances/piping, and cross-connection requirements.

Table 1-1. Notice of Preparation Comment Letters

Commenter	Date Received	General Comments
CDFW	July 31, 2020	Concerns regarding nesting birds; Crotch bumble bee; least Bell's vireo; bat species; landscaping and invasive species; tree removal; fuel modification; human-wildlife interference; biological baseline assessment; direct, indirect, and cumulative impacts; wetland resources. In addition, CDFW provided general comments regarding jurisdictional waters, compensatory mitigation for impacted sensitive habitats, long-term management of mitigation lands, translocation/salvage of plants and animal species, and moving out of harm's way.
LACFD	July 30, 2020	Flood permits required for LACFD facilities, erosion and wildfire associated with hillsides to the north of the site, maintenance of LACFCD flood control facilities, location of LACFCD flood drains; assessment and mitigation of impacts to flood or debris control basins; potential impacts to Bailey's Debris Basin.

Caltrans = California Department of Transportation; CDFW = California Department of Fish and Wildlife; LAFCO = Los Angeles County Flood Control District

In August of 2020, the City held three workshops related to the proposed project. Over 100 residents participated in the City's workshops related to the proposed project and EIR. The Specific Plan has been prepared to establish comprehensive development standards for the proposed project, to ensure timely and adequate infrastructure, open space, and high-quality design. At all three of the workshops held in August 2020, the EIR was discussed in detail and participants provided comments to the City, which were memorialized and included in the record.

Due to COVID-19 and its related restrictions now easing, and in order to hear from as many residents as possible, the City held an additional in-person informational meeting to discuss the Draft EIR. The City conducted this meeting to present the EIR process and to receive written public comments and suggestions regarding the scope and content of the EIR. The meeting has been held on Wednesday July 14, 2021, from 6:00 p.m.–7:30 p.m. at Memorial Park, located at 222 West Sierra Madre Boulevard. During and in regards to this meeting, 47 comment letters were received that focused on environmental issue areas such as water supply, traffic/transportation, circulation, loss of open space and natural habitat, wildfire, aesthetics, drought, climate change, zoning and land use designations, drainage and stormwater runoff, biological resources, wildlife, wildlife movement, air quality, public services, geologic hazards, noise, dust, wastewater/sewer system, and alternatives. These environmental issue areas have all been extensively analyzed in this Draft EIR. Public comments received in relation to this meeting have been incorporated into Appendix A2 of this EIR.

Based on the scope of the proposed project as described in the NOP and comments provided at the 2021 meeting, the following issues were determined to be potentially significant and are addressed in Chapter 4, Environmental Analysis, of this EIR:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils Greenhouse Gas Emissions

- Hazards and Hazardous Emissions
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

1.3.3 Overview of the EIR Process

This EIR will be made available to members of the public, public agencies, and interested parties for a 60-day public comment period in accordance with Section 15105 of the CEQA Guidelines. Public comment of the EIR is intended to focus "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" (14 CCR 15204). The Notice of Completion of the EIR will be filed with the State Clearinghouse as required by Section 15085 of the CEQA Guidelines. In addition, the Notice of Availability of the EIR will be distributed pursuant to Section 15087 of the CEQA Guidelines. Interested parties may provide comments on the EIR in written form. This EIR and all related technical appendices are available for review upon request during the 60-day public comment period online at the following location:

- https://www.cityofsierramadre.com/cityhall/city_manager_s_office/transparency

Once the 60-day public comment period has concluded, the City will review all public comments on the EIR, provide written responses to comments, and authorize revisions to the EIR text, if necessary. The final Mitigation Monitoring and Reporting Program will be incorporated into the Final EIR. Mitigation measures contained in the EIR consider future monitoring requirements and are written in sufficient detail to address impacts of the proposed project, referencing the appropriate implementing permits and plans. If one or more significant environmental impacts are identified, written findings for each of those significant effects must be adopted by the City identifying the impact and how the impact has been reduced to less than significant. If any impact is determined to be significant, but not mitigable to less than significant, the City must adopt findings accompanied by a statement of overriding considerations explaining the reasons why the project will be approved despite its impacts. The Final EIR includes all comment letters received, final written response to comments, and any edits made to the EIR as a result of public review/comment, if necessary.

1.4 Intended Uses of the EIR

According to Section 21002.1(a) of CEQA, "[t]he purpose of an environmental impact report is to identify the significant effects of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." This EIR provides relevant information concerning the potential environmental effects associated with construction and operation of the proposed project and identifies and evaluates potentially significant effects that may result from implementation of the proposed project. It is intended for use by decision makers and the public.

As the designated lead agency, the City has assumed responsibility for preparing this EIR. When deciding whether to approve the proposed project, the City will use the information provided in this EIR to consider potential impacts to the physical environment associated with the proposed project. The City will consider all written comments

received on the EIR during the 60-day public comment period in making its decision to certify the EIR as complete and in compliance with CEQA and in making its determination whether to approve or deny the project. In the final review of the proposed project, the lead agency will consider the document, environmental considerations, economic and social considerations, if applicable, in determining the most appropriate course of action.

After certification of the Final EIR, agencies with permitting authority over all or portions of the project will use the Final EIR as the basis for their evaluation of environmental effects related to the project and approval or denial of other applicable permits or authorizations.

1.5 Organization and Content of the EIR

This EIR is organized to provide a project-level analysis of the potentially significant environmental impacts, mitigation measures, and alternatives for the proposed project. To describe the direct, indirect, and cumulative impacts, mitigation measures, and alternatives for the proposed project, this EIR is organized as follows:

- Executive Summary outlines the conclusions of the environmental analysis and a summary of the project alternatives analyzed in the EIR. This chapter also includes a table summarizing all environmental impacts identified in this EIR along with the associated mitigation measures proposed to reduce or avoid each impact.
- Chapter 1, Introduction, serves as a foreword to this EIR, introducing the project background, applicable environmental review procedures, and format of the EIR.
- Chapter 2, Environmental Setting, describes the project location and physical environmental setting.
- Chapter 3, Project Description, provides a thorough description of the proposed project, project objectives, and required discretionary approvals.
- Chapter 4, Environmental Analysis, provides an analysis of the potentially significant environmental impacts identified, and proposed mitigation measures to reduce or avoid any potentially significant impacts.
- Chapter 5, Cumulative Impacts, provides an analysis of the cumulative effects of the proposed project.
- Chapter 6, Growth Inducement, discusses the project's potential growth-inducing impact.
- Chapter 7, Significant Irreversible Environmental Changes, addresses impacts that have been identified as significant and irreversible.
- Chapter 8, Alternatives, analyzes a range of reasonable alternatives to the proposed project that would lessen or avoid significant environmental effects of the proposed project.
- Chapter 9, References, provides a compiled list of references cited in each section of the EIR.
- Chapter 10, List of Preparers, provides a list of persons that contributed to the preparation of this EIR.
- Appendices include various technical studies and correspondence prepared for the project, as listed in the table of contents.

1.6 Mitigation Monitoring and Reporting Program

The City will prepare a Mitigation Monitoring and Reporting Program prior to project approval. The Mitigation Monitoring and Reporting Program will include all mitigation measures outlined in the EIR, the responsible entity for implementation, implementation timing (prior to construction, during construction, post-construction), and any follow-up reporting requirements (such as submittal of materials to regulatory agencies). The City, as the designated lead agency, is responsible for enforcing and verifying that each mitigation measure is implemented as required.

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2 Environmental Setting

This chapter provides a description of the existing site conditions, surrounding land uses, and land use planning context relevant to the proposed The Meadows at Bailey Canyon Specific Plan Project (project or proposed project).

2.1 Existing Site Conditions

The approximately 17.30-acre project site (Assessor's Parcel Number 5761-002-008) is located at 700 North Sunnyside Avenue, within the northwestern portion of the City of Sierra Madre (City), within the County of Los Angeles (County), California. The project site is currently undeveloped, aside from two access roads.

2.1.1 Surrounding Land Uses

The northwestern portion of the project site borders the City of Pasadena, and the San Gabriel Mountains are located approximately 460 feet north of the site. The site is surrounded by Bailey Canyon, Bailey Canyon Debris Basin, and Bailey Canyon Wilderness Park to the east; existing single-family residential development to the south and west; and the Mater Dolorosa Retreat Center, which is primarily used to host religious and silent retreats and other activities to the north. The Mater Dolorosa Retreat Center currently is on the same parcel as the project site, which is currently split within three different lots. A lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two southern lots that make up the project site as one lot and adjust the northern boundary of this new lot further to the north. The Mater Dolorosa Retreat Center is not a part of the proposed project and no changes to that use or that site are proposed. There are two access roads through the project site to the Mater Dolorosa Retreat Center, one of which serves as emergency access only.

2.1.2 Existing Topography and Soils

Soils on the site consist of Holocene alluvium soils, located within the northwestern portion of the site, as well as Pleistocene alluvial deposits, located in the eastern and southern portions of the site. Artificial fill and terrace deposits underlie the project site. Artificial fill present on site consists of brown, silty, very fine sands and fine to coarse sands that are dry to damp, and loose to medium dense. Artificial fill is unsuitable for structural support. Terrace deposits present on site extent to a maximum depth of 30 feet, and consist of reddish brown, silty/clayey, fine to coarse sands with gravels that were damp to moist and are medium to very dense. These deposits were derived from runoff of the San Gabriel Mountains, located to the north of the site (Appendix E). The topography of the site ranges from 1,178 to 1,111 feet above mean sea level.

2.1.3 Existing Trees and Vegetation

The project site consists of maintained areas of ornamental, non-native grassland, and paved roadways. The non-native grasslands are mowed and composed of almost entirely non-native grasses and herbaceous annuals. No sensitive communities or riparian habitat occur on the project site. In addition, 101 trees, including 10 coast live oak (*Quercus agrifolia*) trees are present at the project site (see Section 4.4, Biological Resources). A few areas to the north and east of the project site, notably associated with Bailey Canyon, could support riparian habitat (see Section 4.4).

2.1.4 Climate

The South Coast Air Basin (SCAB) is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The general region lies in the semi-permanent high-pressure zone of the eastern Pacific; as a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in the SCAB. The average annual temperature varies little throughout the SCAB, averaging 75°F. However, with a less-pronounced oceanic influence, the eastern inland portions of the SCAB show greater variability in annual minimum and maximum temperatures. All portions of the SCAB have recorded temperatures over 100°F in recent years. Although the SCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70% at the coast and 57% in the eastern part of the SCAB. Precipitation in the SCAB is typically 9–14 inches annually and is rarely in the form of snow or hail because of typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the SCAB (WRCC 2020).

In the City, the climate is typically warm during summer when temperatures tend to be in the 80s and cool during winter when temperatures tend to be in the 50s. The warmest month of the year is August with an average maximum temperature of 88.5°F, whereas the coldest month of the year is January with an average minimum temperature of 45.1°F. The wettest month of the year is January with an average rainfall of 4.93 inches (WRCC 2020).

2.1.5 Access

Regional access to the project site is provided via Interstate (I) 210, which runs east to west and is located approximately 1.6 miles south of the project site. In addition, regional access is provided State Route (SR) 164, which runs north to south, and is located approximately 1.7 miles southwest of the site. From these highways, regional access to and from the project is possible via Michillinda Avenue, located to the west of the site, which is the only street considered a major street in the City's General Plan Circulation Element (City of Sierra Madre 2015). Michillinda Avenue is runs through the City of Pasadena, located to the west of the project site, and the City of Arcadia, located to the south and east of the City, and provides a connection to I-210.

The site is directly accessible by two existing roadways, North Sunnyside Avenue, a north/south road that crosses through the western portions of the site, and Carter Avenue, an east/west road that extends from north to south through the eastern portion of the site. An additional access road traverses the northern portion of the site from east to west. Direct access to the site is currently private and gates are located at the southern portion of the site along both North Sunnyside Avenue and Carter Avenue.

2.2 Existing Zoning and Land Use Designations

The project site is both zoned and designated as Institutional (I) in the City's Zoning Code and General Plan, respectively (City of Sierra Madre 2015, 2017).

3 Project Description

This section provides a description of the proposed The Meadows at Bailey Canyon Specific Plan Project (project or proposed project). As required by Section 15124 of the California Environmental Quality Act (CEQA) Guidelines, this section of the Environmental Impact Report (EIR) includes the precise location of the project site, a statement of the project objectives, a general description of project characteristics and proposed infrastructure facilities, and summary of the discretionary actions that would be required.

3.1 Project Location and Project Site

NUWI Sierra Madre LLC (applicant) is proposing to develop an approximately 17.30-acre site (Assessor's Parcel Number 5761-002-008) located at 700 North Sunnyside Avenue (project site). The project site is located within the northwestern portion of the City of Sierra Madre (City), within Los Angeles County, California. The northwestern portion of the project site borders the City of Pasadena, while the base of the San Gabriel Mountains is located approximately 460 feet north of the site (see Figure 3-1, Project Location). Approximately 9.19 acres of the 17.30-acre project site would be developed for single family residential uses; 3.68 acres would be developed as roadways; and approximately 3.39 acres of the project site would be developed as open space, which includes a 3.04-acre neighborhood public park. A 1.04-acre grading and landscape buffer would be provided at the northern portion of the site.

The project site is surrounded by Bailey Canyon and Bailey Canyon Wilderness Park to the east, and existing single-family residential development to the south and west, and the Mater Dolorosa Retreat Center, which is primarily used to host religious and silent retreats and other activities, to the north. It should be noted that the Mater Dolorosa Retreat Center is on the same legal parcel as the project site, which is currently split within three different lots; however, a lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two southern lots that make up the project site as one lot and adjust the northern boundary of this new lot further to the north. There are currently two access roads that run north to south through the project site to the Mater Dolorosa Retreat Center, including North Sunnyside North Sunnyside Avenue, which crosses through the western portions of the site, and Carter Avenue, which extends along the eastern portion of the site. North Sunnyside Avenue would become a public road that would serve the project site and provide access to the Mater Dolorosa Retreat Center, while Carter Avenue would be improved to provide secondary egress and ingress access to the site, as well as provide internal circulation throughout the project site. An additional access road traverses the northern portion of the site from east to west, from Carter Avenue to North Sunnyside Avenue. The Mater Dolorosa Retreat Center is not a part of the project site, and no changes in use are proposed. Open space areas lie to the north of the Mater Dolorosa Retreat Center. Of this this open space area approximately 35 acres are proposed to be dedicated to the City as protected open space; however, this open space dedication area is not considered part of the project site.

3.2 Project Objectives

The following are the objectives of the proposed project:

1. Provide for orderly planning and long-range development of the project site to ensure community compatibility with the distinctive small-town character unique to the Sierra Madre community through adoption of a specific plan that establishes zoning and development standards.
2. Ensure new uses are compatible with the existing community by establishing comprehensive development standards and architectural guidelines through adoption of a specific plan that will guide future development.

3. Provide above-moderate income housing, in accordance with the 6th Cycle Regional Housing Needs Assessment (RHNA).
4. Develop a high-quality single-family residential community that is sensitively sited within the existing natural topography of the site and its surroundings and serves to minimize traffic impacts to adjacent streets.
5. Preserve the hillside open space area by dedicating approximately 35 acres north of the Mater Dolorosa Retreat Center to the City, in order to preserve a portion of Colby Canyon and the Colby Canyon Trail, which would be used by wildlife for movement up and down slope; preserve native vegetation communities and drainages; and preserve land adjacent to the Colby Canyon stream.
6. Provide street improvements to facilitate safe and efficient access to the site from North Sunnyside Avenue.
7. Achieve a net-zero impact on local water supplies to minimize burdens on existing City infrastructure and the impact on the environment.
8. Provide public benefits and amenities to the neighboring community through a development agreement with the City, including a neighborhood public park and enhanced connectivity to the Bailey Canyon Wilderness Park and trail system

3.3 Project Description

The proposed project would establish The Meadows at Bailey Canyon Specific Plan (Specific Plan), which would establish the zoning and development standards to guide future development of single-family residential uses on approximately 9.19 acres of the 17.30-acre project site, and 3.39 acres of open space (including a 3.04-acre neighborhood public park). A 1.04-acre grading and landscape buffer would be located within the northern portion of the project site (see Figure 3-2, Conceptual Site Plan). In addition to the ministerial lot line adjustment required to consolidate the two lots that make up the project site into one and adjust the site's northern boundary further to the north, the discretionary actions before the City include a proposed General Plan amendment to change the land use designation for the project site from Institutional to Specific Plan, and a zone change to change the zoning of the project site from Institutional to Specific Plan (see Section 3.4, Discretionary Actions). Table 3-1 outlines the proposed land uses at the project site.

Table 3-1. Land Use Summary

Zone	Use Type	Other Land Uses	Acres (gross)	Dwelling Units
RL	Detached, Single-Family Dwellings	Private Drives, Landscape Areas, Parking	9.19	42
OS	Public Park, and Open Space Lots	Pedestrian Paths, Natural Features, Landscaping, Play Equipment, Picnic Area and Seating, Parking, Detention Basin and Water Treatment	3.39	—
Circulation				
—	Project Roadways	North Sunnyside Avenue, Carter Avenue, Streets A, B, and C	3.68	—
Grading and Landscaping Buffer				
—	Grading and Landscaping Buffer	Landscaping	1.04	—
		Total	**17.30**	**42**

RL = Residential Low Density; OS = Open Space.

Community benefits would include the new public park, net-zero water impact, establishing a dedicated funding source for long-term park maintenance, and the open space dedication. The proposed project components are outlined in greater detail below. In addition, the proposed project includes dedication to the City of an approximately 30-acre open space area, located on the hillside to the north of the project and the existing Mater Dolorosa Retreat Center.

3.3.1 Residential Development

The proposed project is the adoption of the Specific Plan, which would provide zoning and development standards for future development of the 17.30-acre project site. The Specific Plan provides for two land uses on the project site: single family residential development and open space/neighborhood park. The Specific Plan's residential component will provide for the development of 42 detached single-family dwellings ranging from 2,700 to 3,800 square feet with a minimum lot size of 8,500 square feet. The gross density of the project is approximately 2.5 dwelling units per acre. The proposed residences would be one to two stories. The proposed residential area would make up approximately 9.19 acres of the project site (see Figure 3-2, Conceptual Site Plan).

3.3.2 Neighborhood Park and Open Space

The Specific Plan also includes the development of an approximately 3.04-acre dedicated neighborhood public park at the southernmost portion of the project site (see Figure 3-3, Proposed Park Conceptual Plan). The proposed park would feature resilient play surfacing, a slope slide, a play structure and features, seat walls, benches, picnic areas, large turf areas, a parking lot, decomposed granite trail, and a water quality treatment and detention basin. The proposed public park's location along the southern boundary of the site provides enhanced connectivity to the Bailey Canyon Wilderness Park to the east. Pedestrian access to the Bailey Canyon Wilderness Park and trail would be enhanced through a pedestrian path in the southeast corner of the project site. The location also provides the closest access to existing residential uses and serves as a buffer to existing homes, ensuring compatibility between existing uses and the proposed development. Additionally, the Specific Plan provides for development of approximately 0.35 acres of passive open space located to the east of North Sunnyside Avenue and west of Carter Avenue, adjacent to Streets A and B (see Figure 3-2). Proposed open space would be maintained by the project's homeowner's association while the proposed public park would be maintained by a landscape maintenance district or similar public maintenance entity,

3.3.3 Open Space Dedication

In addition to the 3.39 acres of open space and neighborhood park, to be developed on the project site, to be developed on the project site, the proposed project also proposes dedication to the City of approximately 35 acres of open space hillside land, located north of the existing Mater Dolorosa Retreat Center (see Figure 3-4, Open Space Dedication Area). Conveyance of this open space hillside land to the City would be effectuated through execution of a development agreement between the City and project applicant/landowner.

3.3.4 Conceptual Landscape Plan

The Specific Plan incorporates a Conceptual Landscape Plan (see Figure 3-5, Conceptual Landscape Plan), which would use fire-resistant and drought tolerant tree and plant species to create a natural and safe environment. All plant species proposed, both native and non-native, have been chosen due to their ability to thrive in the City climate. The Conceptual Landscape Plan was developed in consultation with the Sierra Made Community Forest Management Plan

and the Los Angeles County Fire Department Fuel Modification Guidelines. A landscape buffer is proposed within the northern perimeter of the project site, which would provide a landscape buffer and screening between the Mater Dolorosa Retreat Center's existing amphitheater and lookout point and the proposed homes on the northern end of the project site. The proposed landscape buffer would be maintained by the Mater Dolorosa Retreat Center.

3.3.5 Wall and Fence Plan

The Specific Plan would incorporate a Wall and Fence Plan, which would outline the location of proposed slump block walls, top of slope view fences, and retaining walls. The propsoed slump block walls would be primarily located near the northern, southern, and western portions of the project site, as well as between residential lots. Top of slope view fences would be primarily located in the rear of the residential lots on Streets A, and C, and the eastern half of residential lots on Street B, as well as near the eastern site boundary. Retaining walls would be primarily located between the southernmost and northernmost residential lots west of North Sunnyside Avenue; along portions of the east side of North Sunnyside Avenue, particularly near the park and the proposed open space to the northeast; and along portions of Carter Avenue.

3.3.6 Access and Circulation Network

3.3.6.1 Site Access

The project site is located approximately 1.6 miles north of Interstate 210, which runs east to west, and approximately 1.7 miles north of State Route 164, which runs north to south. These highways provide regional access to the project site. The site is directly accessible by two existing roadways, North Sunnyside Avenue, a north/south road that crosses through the western portion of the site, and Carter Avenue, an east-west road that extends through the eastern portion of the site. Public access within both roads currently ends at the Mater Dolorosa Retreat Center's gates within the southern portion of the site. Under the proposed project, access to the project site provided via North Sunnyside Avenue would become public. Carter Avenue would be improved to provide secondary egress and ingress access to the site, as well as internal circulation throughout the project site (see discussion under Section 3.3.6.2, Internal Circulation). A new gate would be located at the Mater Dolorosa Retreat Center's entrance on the northern end of the North Sunnyside Avenue extension.

3.3.6.2 Internal Circulation

The proposed project would include reconfiguration of North Sunnyside Avenue, located within the western portion of the site, which would be moved farther to the west. North Sunnyside Avenue would transition from a width of 40 feet at its existing terminus to a varying 54- to 56.5-foot right-of-way within the project site, with curbs and gutters, parking and planting areas on both sides, a landscaped parkway and sidewalk on the west side, and tree plantings on the east side of the street. Carter Avenue would transition from its existing 25-foot right-of-way to a varying 44.5- to 46-foot right-of-way within the project site and would have curbs and gutters, and planting areas on both sides, parking on the west side of the street, and a sidewalk on the west side of the street. A pedestrian path extending from the east side of Carter Avenue would provide pedestrian access to Bailey Canyon Wilderness Park. Lastly, three additional streets that run east to west would be provided within the project site. This includes Streets A, B, and C (see Figure 3-2, Conceptual Site Plan). Street A would have a maximum 38.5-foot right-of-way and a sidewalk and parking on the south side of the street. Streets B and C would have a maximum 42.5-foot right-of-way and a sidewalk and parking on the south side of the streets. The proposed street sections are shown in Figure 3-6, Proposed Street Sections.

3.3.7 Proposed Utilities

The proposed project would involve improvements to existing utilities. These improvements are discussed in further detail below.

3.3.7.1 Proposed Drainage System and Stormwater Facilities

The proposed project would involve the creation of two independent storm drain networks that convey site runoff to the existing municipal separate storm sewer system (MS4), as shown on Figure 3-7, Proposed Drainage Plan. The first storm drain network proposed would be located within the western portion of the project site, where an existing 36-inch storm drain is present. The proposed project involves removal of portions of this 36-inch pipe, which would be reconstructed under the realigned extension of North Sunnyside Avenue and would connect with a proposed 36-inch reinforced concrete pipe (RCP), to be located at North Sunnyside Avenue, between Street A and Street B. Additionally, two proposed 18-inch RCP lateral connections would be added at the southern end of the project site. Two on-site catch basins are proposed within the southern end of North Sunnyside Avenue to capture runoff generated from the western portion of the project site, and two additional catch basins would be located directly to the northeast of the project site, within the existing Carter Avenue, to capture off-site flows before runoff enters the project site via the North Sunnyside Avenue extension. The western storm drain network would tie in with an existing 36-inch storm drain in North Sunnyside Avenue, at the southwest portion of the site.

The second storm drain network would be located on the eastern portion of the site and would be comprised of 18-inch and 24-inch RCPs. Streets A, B, and C would include two catch basins each, and would each capture and convey surface runoff to the east. The second storm drain network would extent along the majority of Carter Avenue and would also convey surface runoff captured by two catch basins, to be located within the northern portion of the project site. A 24-inch RCP would be located in the southeastern portion of the project site and would run in the east to west direction into the retention gallery within the proposed park and would convey surface runoff from the two proposed catch basins, located on the south end of Carter Avenue. Both proposed RCPs in the eastern storm drain network would discharge to the proposed underground retention storage gallery, which would be located in the southern portion of the project site, within the proposed public park.

A 63,500-cubic foot retention storage gallery, to be located within the public park, would consist of approximately 2,400 linear feet of 60-inch diameter perforated pipe surrounded by gravel bed. This retention storage gallery would be approximately 24 inches below ground and would promote water quality treatment through infiltration. Stormwater not retained in the storage gallery or infiltrated into the ground would be routed to the southeast corner of the proposed park and exit to Crestvale Drive via a 24-inch surface culvert.

Runoff generated within the proposed park would drain via sheet flow and natural concentrated flow to the southeastern portion of the project site and discharge to Crestvale Drive via a 24-inch surface culvert. Portions of the proposed public park would be depressed to promote additional above ground storage and infiltration.

3.3.7.2 Proposed Water System

As shown in Figure 3-8, Proposed Water System, the potable water delivery system would consist of a network of water mainlines, to be located within planned roadways. The existing 8-inch water main in the eastern portion of the project site would be removed and reconstructed as a 12-inch water main in within Carter Avenue. Additional 8-inch water mains are proposed within the other planned roadways (North Sunnyside Avenue extension and A, B and C Streets)

and would distribute the potable water for connection to laterals located on individual lots. The proposed water mainlines would join the existing water mainlines at North Sunnyside Avenue and Carter Avenue at Lima Street, located approximately 670 feet east of the site, and will tie into the existing Oak Crest transmission main.

In addition, to achieve a net-zero impact on current local water supplies, the project Applicant will provide funds to the City to increase the City's water supply through the purchase of additional supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD). The amount of supplemental water purchased will be equal to all anticipated indoor and outdoor water demands for the proposed residential units over a 50-year period. This purchase of additional supplemental water would offset the demand placed on existing supplies and would be in addition to the City's existing agreement with SGVMWD, which allows the City to purchase up to 2,500 acre-feet of supplemental water annually. The additional supplemental water procured by the City as a result of the project will be stored in the Main San Gabriel Groundwater Basin and will be available to serve the public (see project design feature **[PDF]-UTL-1** under Section 3.3.13, below, and further discussion in Section 4.19, Utilities and Service Systems).

3.3.7.3 Proposed Wastewater System

Figure 3-9, Proposed Wastewater System, depicts the on-site sewer system to serve the project. As shown in Figure 3-9, the proposed sewer system would consist of a network of 8-inch sewer mainlines that would be constructed within planned roadways. The proposed sewer mainlines would collect the sewage from laterals located on individual lots. The existing Mater Dolorosa Retreat Center sewer line on the project site would be relocated to be within Carter Avenue, while the existing 8-inch sewer at the southwest corner of the project site would be removed.

3.3.7.4 Dry Utilities

Dry utilities, such as electric, natural gas, and telecommunication infrastructure would be required to be installed to serve the proposed project. These dry utilities would be located within underground conduits in the public or private street corridors/rights-of-way in general conformance with the phasing of the Specific Plan. New electricity, telecommunication, and natural gas lines would be constructed underground throughout the project site. Prior to and during the final infrastructure/improvement plan stages, consultation with all appropriate utilities to determine the extent of the dry utilities needed to serve the project would be required prior to and during the final infrastructure/improvement plan stages.

3.3.8 General Plan Land Use Amendment and Zone Change

The proposed project would require a General Plan land use amendment and zone change from Institutional to Specific Plan.

3.3.9 Subdivision Map Act

As discussed in Section 3.1, Project Location and Project Site, the Mater Dolorosa Retreat Center is on the same parcel as the project site. A lot line adjustment would be processed to consolidate the two lots that make up the project site into one, and adjust the site's northern boundary farther to the north. The Specific Plan, General Plan land use amendment, and zone change will be implemented for the project site only.

3.3.9.1 Tentative Tract Map

Future actions would include the processing of a tentative tract map to subdivide the 17.30-acre project site to create a total of 42 residential lots, plus streets, landscape areas, parking, a public park, landscape buffer, and open space.

3.3.10 Grading Plan

A grading plan has been developed for the proposed project and included in Figure 3-10. As shown in Figure 3-10, topography at the project site would be altered to form four tiers (three tiers for the proposed residential development, and one tier for the proposed park), with a slope between each tier. The proposed project would create a maximum slope of 12% and elevations would range from 1,105 feet to 1,195 feet above mean sea level (AMSL). More specifically, extension of North Sunnyside Avenue would create a maximum slope of 12% and an elevation range of approximately 1,200 feet AMSL in the north to 1,110 feet AMSL at the south end. The improvement of Carter Avenue would create a maximum slope of 12% and an elevation range of approximately 1,195 feet AMSL in the north to 1,110 feet AMSL at the south end. Along the northern boundary, Street A (approximately 670 linear feet of road beginning at North Sunnyside Avenue and ending at Carter Avenue) would be created with road elevations of approximately 1,185 feet AMSL. Street B (approximately 715 linear feet of road beginning at North Sunnyside Avenue and ending at Carter Avenue) would be created with road elevations of approximately 1,161 feet AMSL. Street C (approximately 720 linear feet of road beginning at North Sunnyside Avenue and ending at Carter Avenue) would be created with road elevations of approximately 1,145 feet AMSL. The proposed 3.03-acre park, which would be located along the southern boundary of the project site, would have an elevation of 1,105 feet AMSL. All cut slopes would be designed at a gradient of 2:1 or less.

3.3.11 Development Agreement

The proposed project would include a Development Agreement, between the applicant and the City, which would govern development of the project site, including vesting the development standards in the Specific Plan, and confirming the project benefits of net-zero impact on water supplies, the proposed open space dedication, construction of the public park, and allocation of park credits. In addition, the Development Agreements vests the development fee amounts as the existing City fees. Because approval of a Development Agreement is a discretionary action, the Development Agreement components have been addressed in this EIR.

3.3.12 Construction

Construction of the project would commence in February 2024 and would last approximately 16 months, ending in May 2025. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Clear and Grub: 2 days (February 2024)
- Remedial and Mass Excavation: 12 days (February 2024)
- Import Material to Balance Site: 14 days (February 2024 – March 2024)
- Finish Grading: 17 days (March 2024 – April 2024)
- Building Construction: 14 months (March 2024 – May 2025)
- Wet Utilities: 3 months (April 2024 – June 2024)

- Dry Utilities: 2 months (June 2024 – July 2024)
- Surface Improvements: 2 months (July 2024 – August 2024)
- Architectural Coating: 1 month (January 2025 – February 2025)

Grading would include 3,528 cubic yards of import. Assuming a haul truck capacity of 14 cubic yards per truck, earth-moving activities would result in approximately 252 round trips (504 one-way truck trips) during the Import Material to Balance Site phase.

3.3.13 Project Design Features

The project design features (PDFs) that would be implemented as part of the proposed project are outlined in Table 3-2.

Table 3-2. Project Design Features

Aesthetics	
PDF-AES-1	Lighting at the project site shall comply with Section 3.8.6(A.xii) of the Specific Plan, which includes the following development standards: • All lighting of the building, landscaping, parking area, or similar facilities shall be in compliance with the City's Dark Sky Program. • Lighting shall be hooded and directed downward to reflect away from adjoining properties. • Lighting shall be confined to the lot boundaries and not be oriented towards neighboring properties to protect privacy. • Pedestrian-scaled street lighting shall be provided within the proposed park areas pedestrian routes of travel to enable visibility and safety. In addition, skylights proposed at the project site shall comply with Section 5.5.6 of the Specific Plan, which includes the following architectural design requirements: • Skylight materials and elements should be consistent with the selected architectural style and be fully integrated into the roof design. • Skylights shall employ the following strategies: o Glazing should be clear, flat, or non-reflective. o Tubular, domed, or "bubble" skylights shall not be used. o Skylights should be mounted on the same plan and angle as the roof. o To eliminate skyward glare, interior lights should not be oriented upward through skylights.
PDF-AES-2	Solar panels shall comply with requirements outlined in Section 5.5.6 of the Specific Plan which includes the following, to reduce potential for glare: • Solar panels shall include materials and elements that are consistent with the selected architectural style and shall be fully integrated into the roof design. • Solar panels shall be oriented to the south to maximize efficiency and establish visual consistency across buildings. • Flashing, sheet metal, and framing should be colored to match the roof material.

Table 3-2. Project Design Features

Geology and Soils	
PDF-GEO-1	**Ground Shaking and Seismic Design Criteria.** During the design phase of the proposed development on site, the project shall comply with the Earthquake Design Regulations of Chapter 16, Section 1613 of the California Building Code (CBC) 2019. Based on the mapped values, the coefficients and factors apply to the lateral-force design for the proposed structures at the site are outlined in Appendix E, Geotechnical Investigation. Terrace deposits are at grade and Class D is recommended.
PDF-GEO-2	**Grading.** Grading of the site will consist of cut and fill operations to create building pads and associated streets. Grading shall involve the removal and recompaction or artificial fill and loose terrace deposits (see **MM-GEO-1**) in addition of mass-excavation of the project site. The following shall be incorporated during grading activities: Monitoring: All earthwork, including clearing, site preparation, and fill replacement, shall be conducted with engineering control, under observation and testing by the geotechnical engineer and in accordance with the requirements of a site-specific geologic and geotechnical engineering report.
PDF-GEO-3	**Site Preparation**. The following shall be incorporated during site preparation activities: • Existing Structure Location: The general contractor shall locate all surface and subsurface structure on the site or on the approved grading plan prior to preparing the ground. • Existing Structural Removal: Any underground structures, including septic tanks, wells, pipelines, foundations, utilities, that have not been located prior to grading shall be removed or treated in a manner recommended by the Geotechnical Engineer. • Clearing and Stripping: The construction areas shall be cleared and stripped of all vegetation, trees, bushes, sod, topsoil, artificial fill, debris, asphalt, concrete and other deleterious material prior to fill placement. • Removals: Removals of suitable soil shall be performed on the site in accordance with the soils report. • Subgrade Preparation: Subgrade for foundations, pavement areas, overexcavations, and for those areas receiving any additional fill be prepared by scarifying the upper 12 inches and moisture conditioning, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum. The scarified areas shall be compacted to at least 90 percent of the maximum laboratory density, as determined by ASTM D-1557-12 compaction method. All areas to receive fill should be observed by the Geotechnical Engineer prior to fill placement. • Subgrade Inspection: Prior to placing fill, the ground surface to receive fill should be observed, tested, and approved by the Geotechnical Engineer.
PDF-GEO-4	**Fill Placement.** • Laboratory Testing: Representative samples of materials to be utilized as compacted fill shall be analyzed in a laboratory to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material should be conducted. • On-Site Fill Material: The on-site soils are adequate for re-use in controlled fills provided the soils do not contain any organic matter, debris, or any individual particles greater than 12 inches in diameter. • Rock Fragments: Rock fragments less than 12 inches in diameter may be utilized in the fill, provided they are not placed in concentrated pockets, surrounded with fine grained

Table 3-2. Project Design Features

	material, and the distribution of the rocks is supervised by the Geotechnical Engineer. Any rock fragments over 6 inches should be kept below a depth of 5 feet. Rocks greater than 12 inches in diameter should be taken off-site, placed in fill areas designated as suitable for rock disposal, or placed in accordance with the recommendations of the Geotechnical Engineer. • Subgrade Verification and Compaction Testing: Regardless of material or location, all fill material should be placed over properly compacted subgrades in accordance with the Site Preparation section of Appendix E, Geotechnical Investigation, of this EIR. The condition of all subgrades shall be verified by the Geotechnical Engineer before fill placement or earthwork grading begins. Earthwork monitoring and field density testing shall be performed during grading to provide a basis for opinions concerning the degree of soil compaction attained. • Fill Placement: Approved on-site material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material should be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum moisture content. The fill shall be placed and compacted in horizontal layers, unless otherwise recommended by the geotechnical engineer. • Compaction Criteria - Shallow Fills: For fills less than 40 feet in vertical thickness, each layer shall be compacted to at least 90 percent of the maximum laboratory density for material used as determined by ASTM D-1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the fill material is in accordance with the requirements of the Geotechnical Engineer. • Fill Material - Moisture Content: All fill material placed shall be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent. If excessive moisture in the fill results in failing results or an unacceptable pumping condition, then the fill shall be allowed to dry until the moisture content is within the necessary range to meet the required compaction requirements or reworked until acceptable conditions are obtained. • Keying and Benching: All fills should be keyed and benched through all topsoil, slopewash, alluvium or colluvium or creep material, into sound terrace deposits or firm material where the slope receiving fill is steeper than 5:1 (Horizontal: Vertical) or as determined by geotechnical engineer. The standard acceptable bench height is four feet into suitable material. The key for side hill fills shall be a minimum of 15 feet within firm materials, with a minimum toe embankment of 2 feet into firm material, unless otherwise specified by the geotechnical engineer. • Drainage Devices: Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, or with the recommendations of the Geotechnical Engineer and Engineering Geologist. • Cut-Fill Transition: Where a cut-fill transition is present beneath planned structures, the cut area shall be overexcavated three feet below the bottom of proposed footings and the excavated material shall be replaced as compacted fill to reduce the transition

Table 3-2. Project Design Features

	condition. These guidelines shall also be followed in areas where lots are underlain by soils or rock with differential expansion potential and also for lots located above descending buttress and stabilization fills.
PDF-GEO-5	**Grading Control.** Grading control activities shall comply with the following: • Grading Inspection: Earthwork monitoring and field density testing shall be performed by the Geotechnical Engineer during grading to provide a basis for opinions concerning the degree of soil compaction attained. The Contractor shall receive a copy of the geotechnical engineer's Daily Field Engineering Report, which shall indicate the results of field density tests for that day. Where failing tests occur or other field problems arise, the contractor shall be notified of such conditions by written communication from the geotechnical engineer in the form of a conference memorandum, to avoid any misunderstanding arising from oral communication. • Subgrade Inspection: All processed ground to receive fill and overexcavations should be inspected and approved by the Geotechnical Engineer prior to placing any fill. The contractor should be responsible for notifying the geotechnical engineer when such areas are ready for inspection. Inspection of the subgrade may also be required by the controlling governmental agency within the respective jurisdictions. • Subgrade Testing: Density tests shall also be made on the prepared subgrade to receive fill, as required by the Geotechnical Engineer. • Density Testing Intervals: In general, density tests shall be conducted at minimum intervals of 2 feet of fill height or every 500 cubic yards. Due to the variability that can occur in fill placement and different fill material characteristics, a higher number of density tests may be warranted to verify that the required compaction is being achieved
PDF-GEO-6	**Cut Slopes.** Cut slope activities shall comply with the following: • Gradient: All cut slopes shall be designed at a gradient of 2:1 or less. • Observation: The Engineering Geologist shall observe all cut slopes excavated in rock, lithified or formation material at vertical intervals not exceeding ten feet. • Change of Conditions: If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or faults planes, or areas of unstable material are encountered during grading, these conditions shall be analyzed by the engineering geologist and geotechnical engineer, and recommendations shall be made to treat these problems. • Protection: Cut slopes that face in the same direction as the prevailing drainage shall be protected from slopewash by a non-erosive interceptor swale placed at the top of the slope. • Criteria: Unless otherwise specified in the geotechnical and geological report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies. • Drainage Devices: Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the geotechnical engineer or engineering geologist.
PDF-GEO-7	**Fill Slopes.** Fill slopes activities shall comply with the following: • Gradient: All fill slopes shall be designed at a gradient of 2:1 or less. • Slope Face - Compaction Criteria: The contractor shall be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses and

Table 3-2. Project Design Features

	stabilization fills. This may be achieved by overbuilding the slope a minimum of five feet, and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction. If the method of achieving the required slope compaction selected by the contractor fails to produce the necessary results, the contractor should rework or rebuild such slopes until the required degree of compaction is obtained. Slope testing shall include testing the outer six inches to three feet of the slope face during and after placement of the fill. In addition, during grading, density tests will be taken periodically on the flat surface of the fill three to five feet horizontally from the face of the slope. • Slope Face - Vegetation: All fill slopes shall be planted or protected from erosion by methods specified in the geotechnical report, or required by the controlling governmental agency.
PDF-GEO-8	**Utility Trenching and Backfill.** Utility trenching and backfill activities shall comply with the following: • Utility Trenching: Open excavations and excavations that are shored shall conform to all applicable Federal, State and local regulations. • Backfill Placement: Approved on-site or imported fill material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material shall be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum moisture content. The fill shall be placed and compacted on a horizontal plane, unless otherwise recommended by the geotechnical engineer. • Backfill Compaction Criteria: Each layer of utility trench backfill shall be compacted to at least 90 percent of the maximum laboratory density determined by ASTM D- 1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the compaction criteria is reached. • Exterior Trenches Adjacent to Footings: Exterior trenches, paralleling a footing and extending below a 1H:1V plane projected from the outside bottom edge of the footing, shall be compacted to 90 percent of the laboratory standard. Sand backfill, unless it is similar to the in-place fill, shall not be allowed in these trench backfill areas. Density testing, along with probing, should be accomplished to verify the desired results. • Pipe Bedding: We recommend that a minimum of 6 inches of bedding material shall be placed in the bottom of the utility trench. All bedding materials shall extend at least 4 inches above the top of utilities which require protection during subsequent trench backfilling. All trenches shall be wide enough to allow for compaction around the haunches of the pipe. • Groundwater Migration: Backfilled utility trenches may act as French drains to some extent, and considerable groundwater flow along utility bedding and backfill shall be expected. Wherever buried utilities, or structures which they may intersect, could be adversely affected by such drainage, provisions shall be made to collect groundwater migrating along the trench lines. These situations include where buried utilities enter buildings, particularly where they enter below grade mechanical rooms, and where buried utilities enter junction boxes or switching stations that are intended to remain

Table 3-2. Project Design Features

	dry. Measures that remedy this include, but are not limited to, placement of perforated drain pipes below and continuous with bedding materials, and placement of seepage barriers such as lean mix concrete or controlled density fill (CDF).
PDF-GEO-9	**Construction Considerations.** Construction activities shall comply with the following: • Erosion Control: Erosion control measures, when necessary, shall be provided by the contractor during grading and prior to the completion and construction of permanent drainage controls. • Compaction Equipment: It is also the contractor's responsibility to have suitable and sufficient compaction equipment on the project site to handle the amount of fill being placed and the type of fill material to be compacted. If necessary, excavation equipment shall be shut down to permit completion of compaction in accordance with the recommendations contained herein. Sufficient watering devices/equipment shall also be provided by the contractor to achieve optimum moisture content in the fill material. • Final Grading Considerations: Care shall be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property.
PDF-GEO-10	**Temporary Excavations**. Where the necessary space is available, temporary unsurcharged embankments may be slope back without shoring. The slope should not be cut steeper than 5 feet and below at near vertical temporary gradient, and above 5 feet at a 1:1 temporary gradient. In areas where soils with little or no binder are encountered, shoring or flatter excavation slopes shall be made. The recommended temporary excavation slopes do not preclude local ravelling or sloughing. Where sloped embankments are used, the top of the slope should be barricaded to prevent equipment and heavy storage loads within five feet of the top of the slope. If the temporary construction embankments are to be maintained for long periods, berms should be constructed along the top of the slope to prevent runoff water from eroding the slope faces. The soils exposed in the temporary backcut slopes during excavation shall be observed by qualified personnel so that modifications of the slopes can be made if variations in the soil conditions occur. On-site grading should not undermine support of existing off-site improvements.
PDF-GEO-11	**Drainage/Landscape Maintenance**. The southern area of the site, where the proposed park would be located, may be used for stormwater infiltration. The site is underlain by mostly sandy soil, which have acceptable infiltration rates. However, additional subsurface exploration and infiltration testing shall be required in this area to determine the actual soil infiltration rates for design purposes of the system used. Any infiltration systems shall be setback a sufficient distance from proposed structures and adjacent properties to avoid adverse impacts. These distances shall be determined with future studies. In areas of residential development, water shall not be allowed to pond or seep into the ground, or flow over slopes in a concentrated manner. Roof gutters and yard drains shall be provided. Pad drainage shall be directed toward the street or any approved watercourse area swale via non-erosive channel, pipe and/or dispersion devices. In addition to control of landscape watering, pad drainage shall slope away from structures.
PDF-GEO-12	**Conventional Foundation Recommendations**. Appendix E includes recommendations for foundation design, including bearing subgrades, subgrade verification, footing depth and width, and bearing pressures, provided for preliminary design purposes and the final expansion index shall be determined following grading. Conventional or post-tensioned foundations shall be used to support the proposed structures. All footings should meet current slope setback requirements. Foundations shall be designed for low expansive soil

Table 3-2. Project Design Features

	conditions. The proposed project shall comply with conventional foundation design, as outlined in the final design of the project.
PDF-GEO-13	**General Recommendations.** The project shall comply with the following general recommendations: 1. Drainage and Site Maintenance: All slab foundation areas shall be moisture conditioned to at least optimum moisture, but no more than 5 percent above optimum moisture for a depth of at least 12 inches below subgrade for low expansion index soil. The post-tensioned slab designer shall determine if the moisture penetration is sufficient for this design. The subgrade soil moisture shall be observed by a soil engineer or his/her representative prior to pouring concrete. It is suggested the above stated moisture be obtained and maintained at least a suggested 2 days prior to pouring concrete. 2. A 10-mil Visqueen vapor barrier shall be placed underneath habitable area slabs and/or slabs with floor coverings. This barrier can be placed directly on the subgrade soils, but should be overlain by a two-inch layer of imported sand. This vapor barrier shall be lapped and sealed (especially around the utility perforations) adequately to provide a continuous waterproof barrier under the entire slab. 3. Surface water shall be kept from infiltrating into the subgrade adjacent to the house foundation system. This may include, but not be limited to rain water, roof water, landscape water and/or leaky plumbing. The lots are to be fine graded at the completion of construction to include positive drainage away from the structure and roof water will be collected via gutters, downspouts, and transported to the street in buried drain pipes. Homebuyers should be cautioned against constructing open draining planters adjacent to the houses, or obstructing the yard drainage in any way. 4. Utility trenches beneath the slabs shall be backfilled with compacted native soil materials, free of rocks. 5. Subgrade soil beneath footings and slabs should be premoistened prior to placement of concrete. 6. Standard County of Los Angeles structural setback guidelines are applicable, except where superseded by specific recommendations by the project geologist and geotechnical engineer. 7. Building or structure footings shall be set back a horizontal distance, consistent with the requirements of Appendix E. 8. Prior to placing concrete in the footing excavations, an inspection shall be made by our representative to ensure that the footings are free of loose and disturbed soils and are embedded in the recommended material.
PDF-GEO-14	**Retaining Walls.** Retaining wall footings should be founded into compacted fill or dense terrace deposits. The near surface on site soils have a low expansion index and should be confirmed prior to foundation construction. The equivalent fluid pressures recommended are based on the assumption of a uniform backfill and no build-up of hydrostatic pressure behind the wall. To prevent the build-up of lateral soil pressures in excess of the recommended design pressures, over compaction of the fill behind the wall should be avoided. This can be accomplished by placement of the backfill above a 45-degree plane projected upward from

Table 3-2. Project Design Features

	the base of the wall, in lifts not exceeding eight inches in loose depth, and compacting with a hand-operated or small, self- propelled vibrating plates. 1. **Conventional (Yielding) Retaining Walls.** All recommendations for active lateral earth pressures contained herein assume that the anticipated retaining structures are in tight contact with the fill soil (or dense alluvium) that they are supposed to support. The earth support system must be sufficiently stiff to hold horizontal movements in the soil to less than one percent of the height of the vertical face, but should be free-standing to the point that they yield at the top at least 0.1 percent of the height of the wall. 2. **Earth Pressures on Conventional (Yielding) Retaining Walls.** The earth pressures on walls retaining permeable material, compacted fill, or natural soil shall be assumed equal to that exerted by an equivalent fluid with densities consistent with those listed in Appendix E. 3. **Restrained (Non-Yielding) Walls.** Restrained (Non-Yielding) Walls shall be constructed consistent with ASTM D-1557-12, and the requirements of Appendix E. 4. **Seismic Pressures for Retaining Walls.** Seismic Pressures for Retaining Walls shall be constructed consistent with the requirements of Appendix E.
PDF-GEO-15	**General Recommendations for Retaining Walls.** The following general recommendations shall be implemented for construction of retaining walls: • Any anticipated superimposed loading, such as upper retaining walls, other structures, within a 45-degree projection upward from the wall bottom, except retained earth, shall be considered as surcharge and provided in the design. • A vertical component equal to one-third of the horizontal force so obtained may be assumed at the application of force. • The depth of the retained earth shall be the vertical distance below the ground surface, measured at the wall face for stem design or measured at the heel of the footing for overturning and sliding. • The walls shall be constructed with weep holes near the bottom, on five-foot centers or with perforated drainpipe in a gravel envelope at the bottom and behind the wall. A one-foot thick zone of clean granular, free-draining material should be placed behind the wall to within three feet of the surface. On-site soil may be used for the remainder of the backfill and should be compacted to 90 percent relative compaction as determined by ASTM Test Designation D-1557-12. • A concrete-lined swale is recommended behind retaining walls that can intercept surface runoff from upslope areas. The surface runoff shall be transferred to an approved drainage channel via non-erosive drainage devices.
Utilities and Service Systems	
PDF-UTL-1	Prior to issuance of a building unit, the project applicant will provide funds to the City to purchase supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD) in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period. This purchase would be in addition to the City's existing agreement with SGVMWD providing for the purchase of supplemental imported water.

Table 3-2. Project Design Features

Wildfire	
PDF-WF-1	The proposed project shall comply with the requirements outlined in the Fire Protection Plan (FPP) (Appendix F2) during construction and operations.

3.4 Discretionary Actions

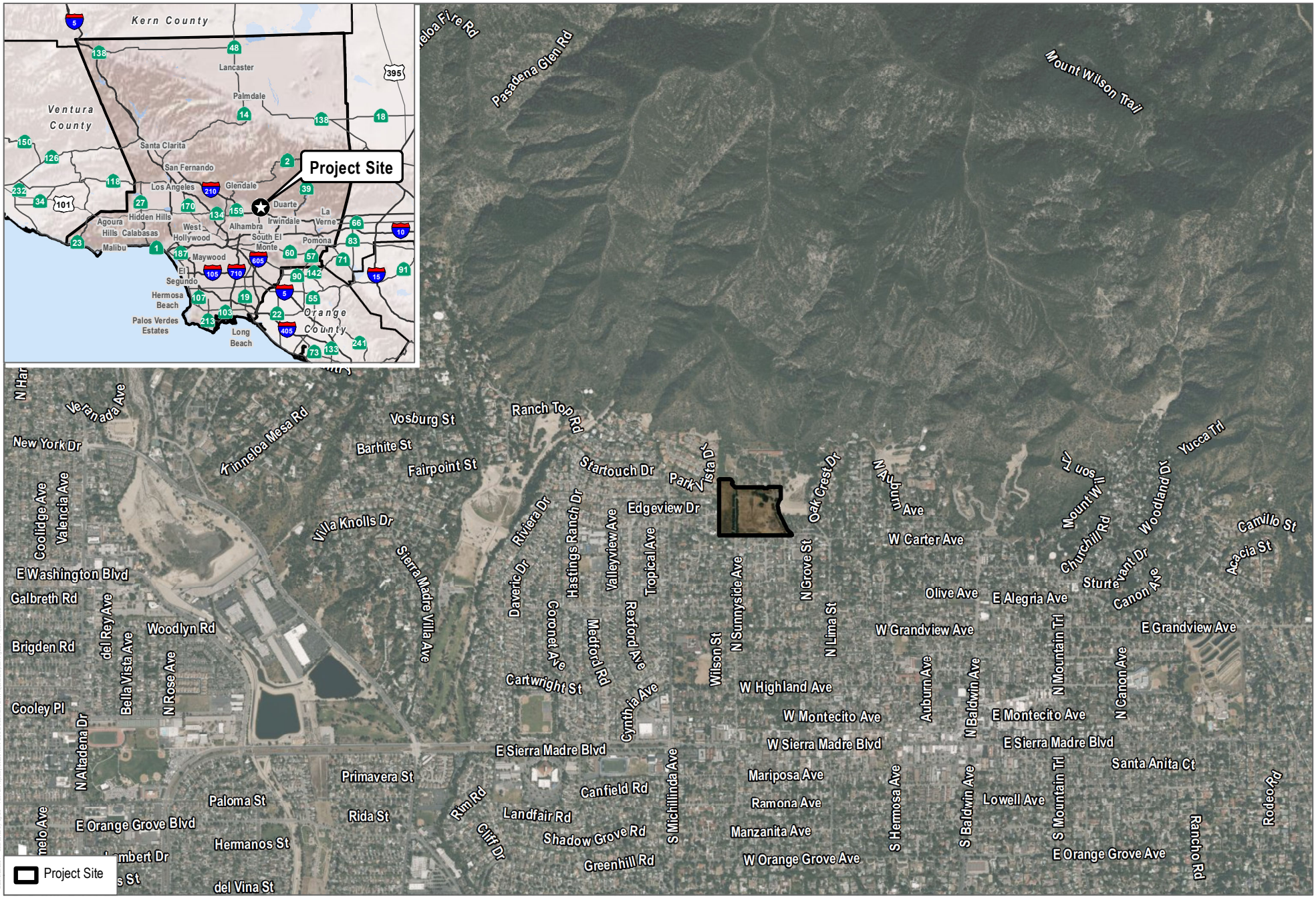
A discretionary action is an action taken by an agency that calls for the exercise of judgment in deciding whether to approve or how to carry out a project. The following discretionary actions are associated with the proposed project and would be considered by the City:

- Certification of a Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to CEQA
- Approval of amendments to the City of Sierra Madre General Plan to change the land use designation for the project site from Institutional to Specific Plan
- Approval of amendments to the Zoning Code to change the zoning designation for the project site from Institutional to Specific Plan
- Approval of amendments to update the City's Zoning and Land Use maps
- Approval of The Meadow at Bailey Canyon Specific Plan
- Approval of the Development Agreement between the Applicant and the City
- Approval of a landscape maintenance district or similar public maintenance entity, for long-term maintenance of the proposed public park

3.5 Responsible Agencies

The following are responsible agencies, whose approval would be required for project implementation:

- Los Angeles Regional Water Quality Control Board
- Los Angeles County Department of Public Works
- California Department of Transportation



SOURCE: County of Los Angeles 2020; Bing Maps

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0 1,000 2,000 Feet

FIGURE 3-1

Project Location

The Meadows at Bailey Canyon EIR

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LEGEND

PROJECT BOUNDARY (17.30 AC)

LOW DENSITY RESIDENTIAL (9.19 AC)

OPEN SPACE (0.35 AC) - NOTE: LANDSCAPE AT LOT A TO BE MAINTAINED BY MDRC

PARK SPACE (3.04 AC)

GRADING AND LANDSCAPE BUFFER (1.04 AC)

SOURCE: Fuscoe, 2021

FIGURE 3-2

Conceptual Site Plan

The Meadows at Bailey Canyon EIR

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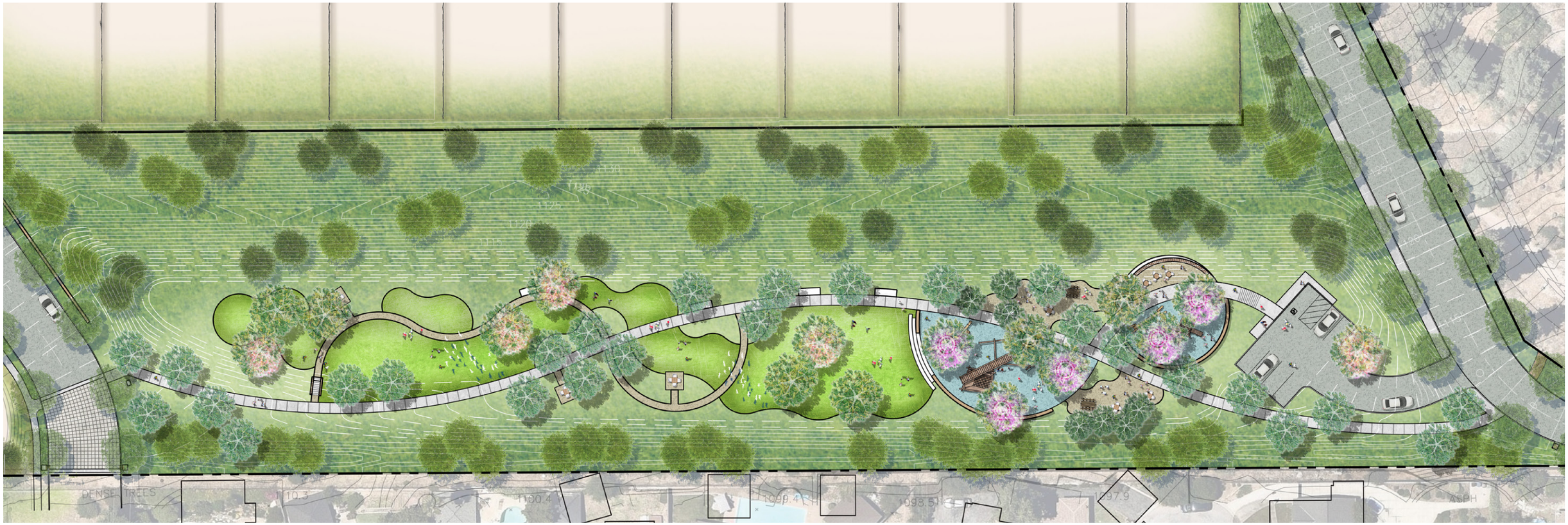

FIGURE 3-3

Proposed Park Conceptual Plan

The Meadows at Bailey Canyon EIR

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SOURCE: Fuscoe, 2021

FIGURE 3-4

Proposed Open Space Dedication Area

The Meadows at Bailey Canyon EIR

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SOURCE: Fuscoe, 2021

FIGURE 3-5

Conceptual Landscape Plan

The Meadows at Bailey Canyon EIR

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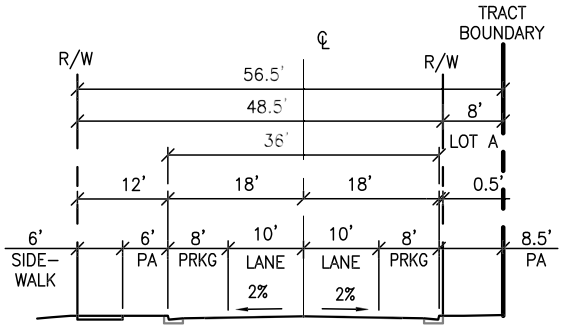
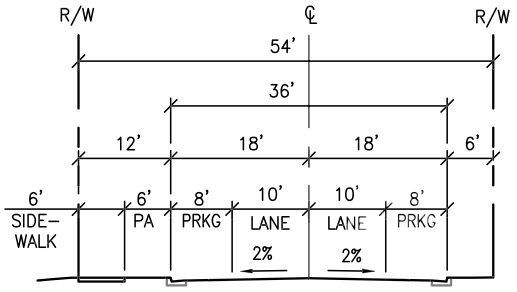
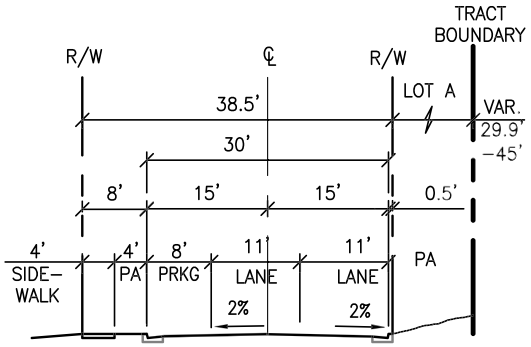


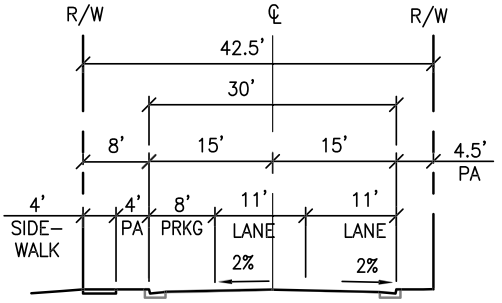
SECTION A
1"=20' SUNNYSIDE AVE.



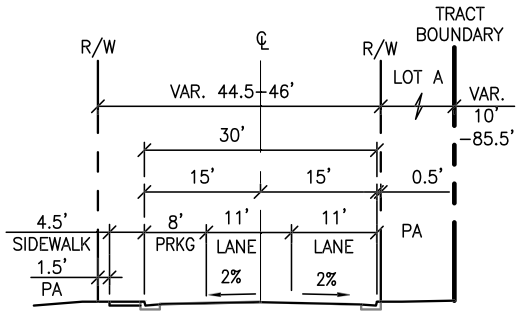
SECTION B
1"=20' SUNNYSIDE AVE.



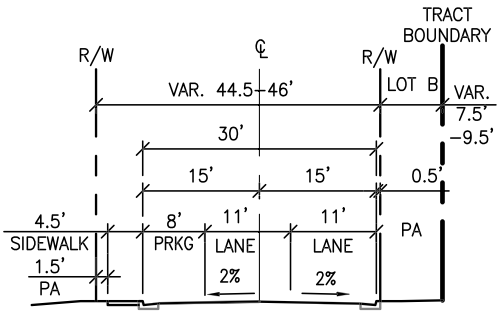
SECTION C
STREET A



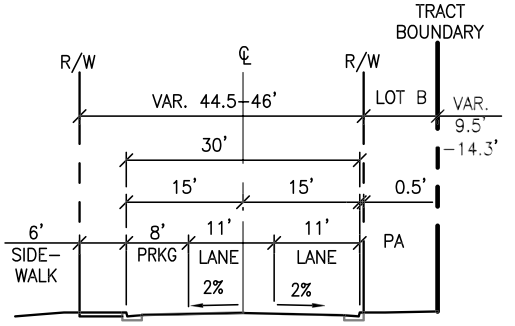
SECTION D
1"=20' STREETS B AND C



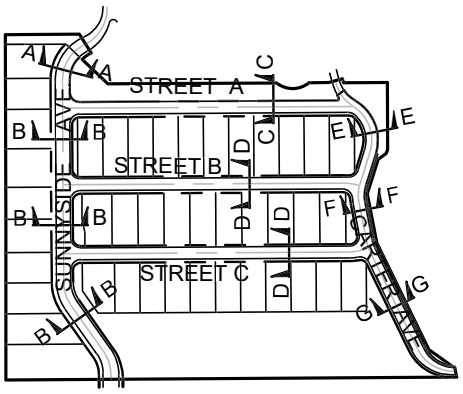
SECTION E
"=20' CARTER AVE.



SECTION F
:0' CARTER AVE.



SECTION G
CARTER AVE.



SOURCE: Fuscoe, 2021

FIGURE 3-6

Proposed Street Sections

The Meadows at Bailey Canyon EIR

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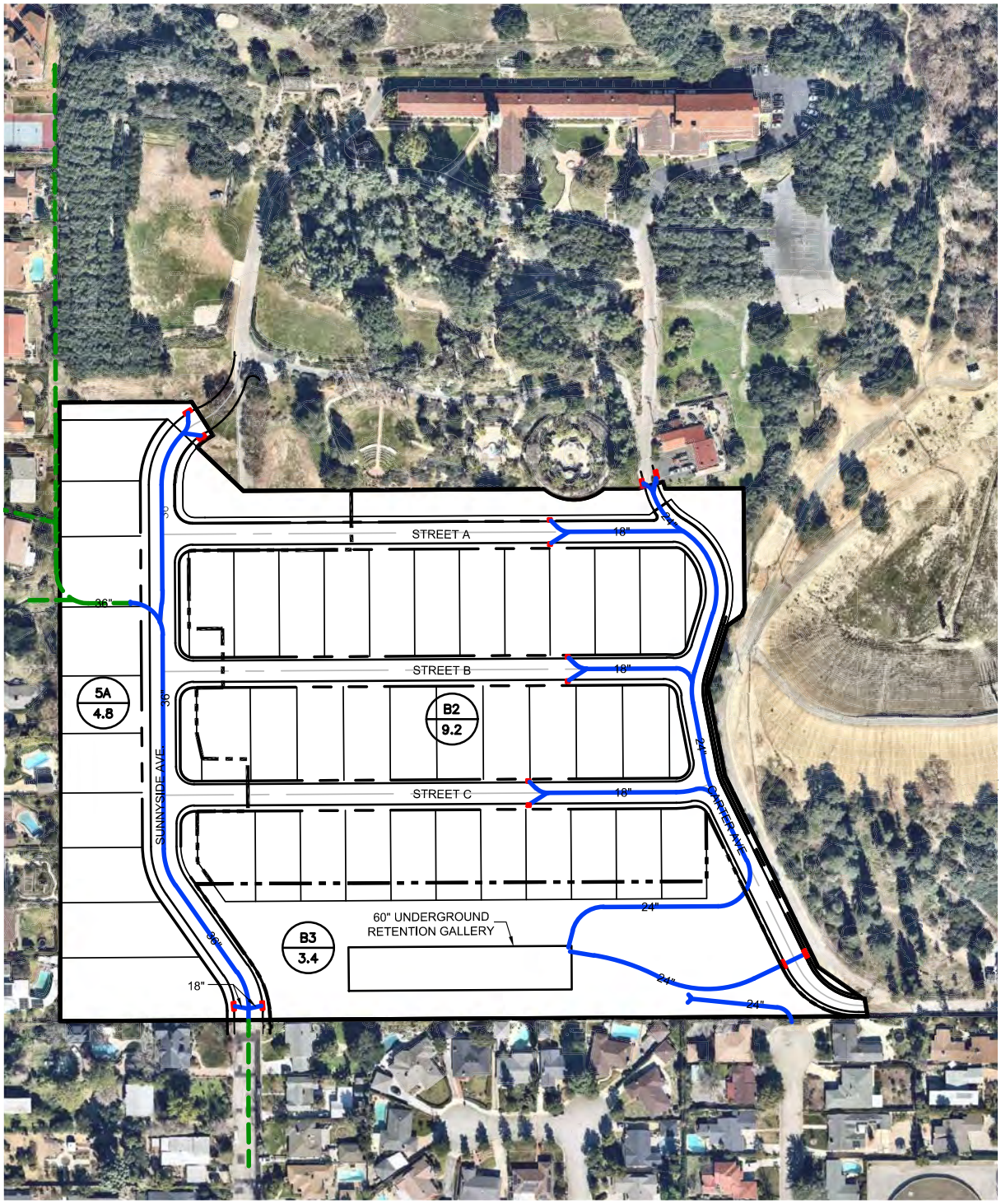

SOURCE: Fuscoe, 2021

FIGURE 3-7

Proposed Drainage Plan

The Meadows at Bailey Canyon EIR

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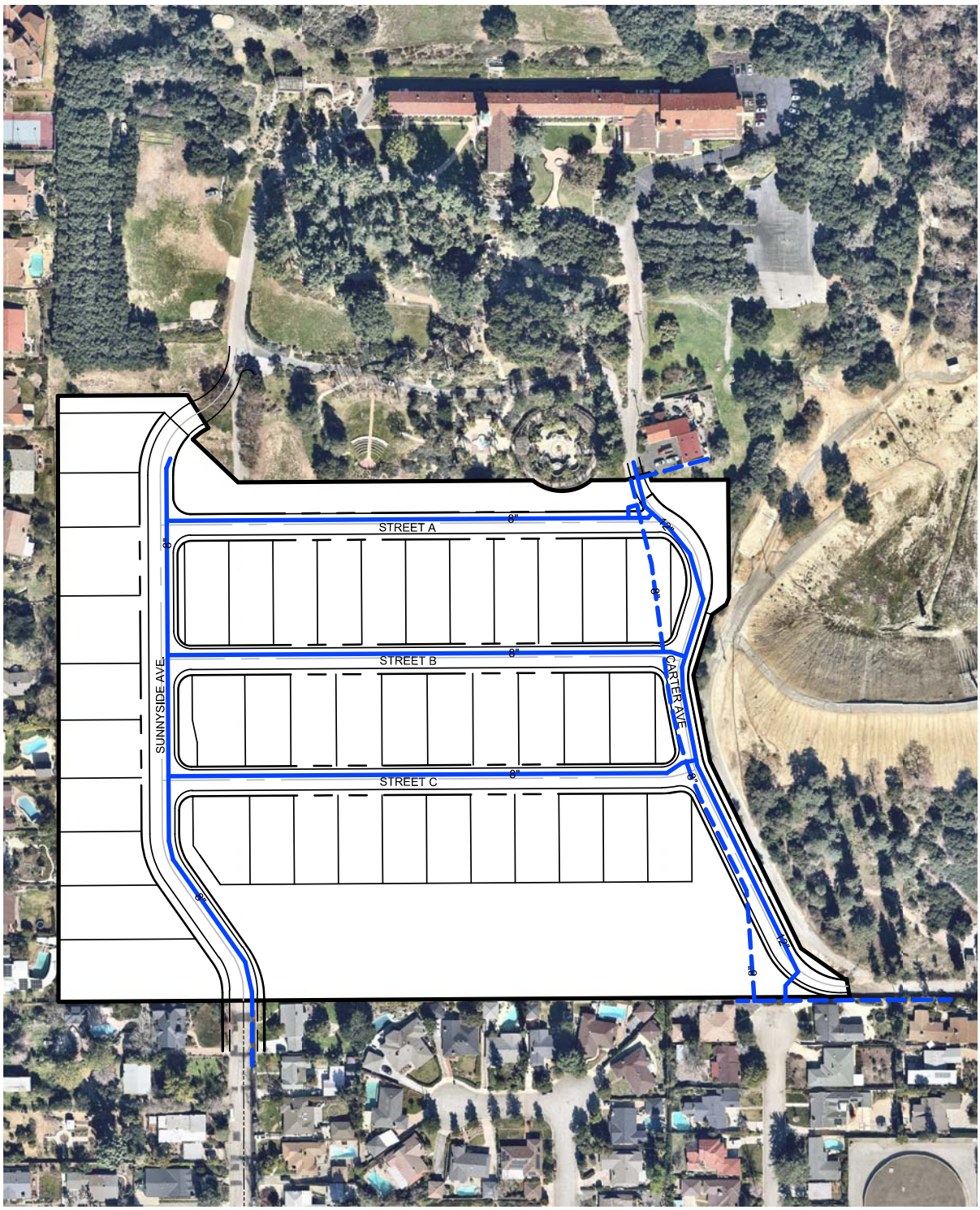

SOURCE: Fuscoe, 2021

FIGURE 3-8

Proposed Water System

The Meadows at Bailey Canyon EIR

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LEGEND

PROJECT BOUNDARY

PROPOSED WASTEWATER SYSTEM

EXISTING WASTEWATER SYSTEM

SOURCE: Fuscoe, 2021

FIGURE 3-9

Proposed Wastewater System

The Meadows at Bailey Canyon EIR

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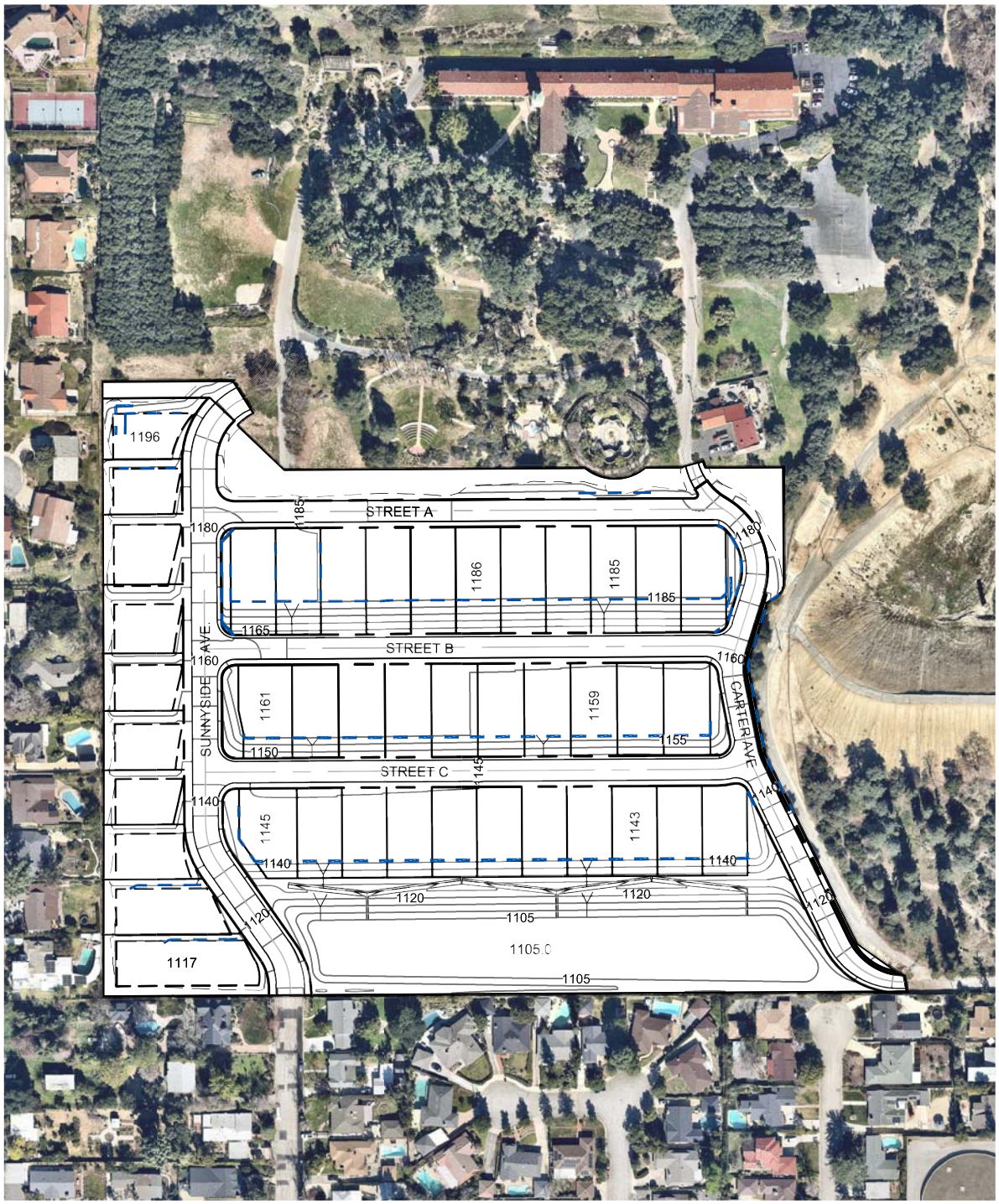

LEGEND

PROJECT BOUNDARY

PROPOSED RETAINING WALL

1) POTENTIAL LANDSCAPE/RETAINING WALLS ALONG FRONT OF LOTS 1-10 TO BE FINALIZED DURING FINAL DESIGN
2) WALL LOCATIONS SUBJECT TO CHANGE PROVIDED THEY MEET HEIGHT GUIDELINE WITHIN THE SPECIFIC PLAN

NOTE: ELEVATIONS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL ELEVATIONS SUBJECT TO CHANGE DURING FINAL DESIGN.

SOURCE: Fuscoe, 2021

FIGURE 3-10

Grading Plan

The Meadows at Bailey Canyon EIR

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4 Environmental Analysis

The following sections analyze the potential environmental impacts that may occur as a result of implementation of The Meadows at Bailey Canyon Specific Plan (Specific Plan, project, or proposed project). Each issue analysis section includes a description of existing conditions, the criteria for the determination of impact significance; evaluation of potential project impacts, including mitigation measures (if applicable); identification of project design features that are components of the project, including the Specific Plan, that help avoid or reduce potential impacts; and a conclusion of significance after mitigation for impacts identified as requiring mitigation (if applicable). Separately considered, but part of the required environmental analysis, is a consideration of cumulative impacts that considers the impacts of the project with other past, present, and reasonably foreseeable future related projects. Cumulative impacts are addressed in Chapter 5.

The environmental issues addressed in this chapter are as follows:

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

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4.1 Aesthetics

This section describes the existing visual conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures or any applicable project design features related to implementation of the proposed project.

4.1.1 Existing Conditions

Project Site

Currently, the project site consists of largely undeveloped land with existing roads and infrastructure associated with the Mater Dolorosa Retreat Center. The project currently shares a legal parcel with the Mater Dolorosa Retreat Center, located to the north of the project site. North Sunnyside Avenue runs north/south across the western portion of the project site and Carter Avenue runs north/south adjacent to the eastern project site boundary. There is also an access road running east/west, connecting these two roads. Within the City of Sierra Madre (City) General Plan, the project site is designated as Institutional (City of Sierra Madre 2015). The project site is also zoned Institutional. The aesthetic character of the project site is currently defined by the gently sloping and undeveloped landscape rising from the southern boundary of the project site toward the landscaped and built portion of the Mater Dolorosa Retreat Center.

Topography of the project site includes a downhill grade generally in the north to south direction. Elevations of the site range from a high of 1,210 feet above sea level (AMSL) at the northwestern portion of the site, to a low of 1,107 feet AMSL in the southeastern portion of the site.

Surrounding Land Uses

The project site is surrounded by existing development, including residential land uses to the south and west, the Mater Dolorosa Retreat Center to the north, and Bailey Canyon and the Bailey Canyon Wilderness Park to the east. The foothills of the San Gabriel Mountains begin just north of the Mater Dolorosa Retreat Center, providing scenic background views beyond the project site when oriented north.

Scenic Resources

According to the City's General Plan, the City is known for its scenic backdrop of the southern foothills of the rugged San Gabriel Mountains. The foothills possess a high degree of aesthetic value, with the hillsides and ridgelines being the most prominent visual features. Additionally, other significant features of the natural vegetation and topography, such as swales, knolls, and rock outcroppings, contribute to the aesthetic quality of the foothills. Views of these features are afforded from various viewpoints throughout the City and outside the City's boundaries (City of Sierra Madre 2015). The project site is located approximately 460 feet south of the base of the San Gabriel Mountains.

Scenic Highways

According to the California Department of Transportation (Caltrans) Scenic Highway Mapping System (Caltrans 2020), there are no officially designated scenic highways that pass by the project site. The following are the closest designated scenic highways:

- California State Route (SR) 2 from La Cañada Flintridge to San Bernardino County, located approximately 6.75 miles north of the project site.

The following are the closest eligible scenic highways:

- Interstate (I) 210 from I-5 to SR-134, located approximately 5.5 miles west of the project site.
- California SR-39 from I-210 in Azusa to SR-2, located approximately 8.75 miles east of the project site.

There are no locally designated scenic roadways in the City.

Light and Glare

Currently, the project site is undeveloped and not lit at night, aside from two light posts, which are currently present in the southern portion of the site, at the gate where public access along North Sunnyside Avenue terminates. Additionally, the project site does not contain expanses of material that would result in glare. The City is urbanized and primarily generates lighting typical of residential land uses, such as exterior night lighting and street lighting. Surrounding residential land uses contain lighting typical of an urban setting, including but not limited to street lighting and security lighting. The Mater Dolorosa Retreat Center also generates similar lighting as the surrounding residential uses. These surrounding land uses also include windows and other glass or metal expanses that may result in minimal localized glare.

Viewers

Viewer exposure varies depending on several factors including the angle of view (i.e., normal, inferior, or superior viewing angles); view distance (foreground, middle ground, and background); relationship to sun angle (backlighting versus front or side lighting); the extent of visibility (i.e., whether views are panoramic or limited by vegetation, topography, or other land uses); and viewer screening conditions (e.g., whether the project facilities will be skylined on ridgelines, backscreened by topography and/or vegetation, or screened by structures or vegetation in the foreground). Viewer exposure also considers the duration of view based on viewer activity (e.g., travel route, residential, recreation) and often relates to speed of travel (pedestrian, vehicular, or stationary).

The project site is located in the northwestern portion of the City and just south of the Mater Dolorosa Retreat Center. Public viewpoints of the project site are limited due to the location of the site. Public roadways adjacent to the project site include Crestvale Drive, which terminates at a cul-de-sac adjacent to the southern boundary of the project site. North Sunnyside Avenue and Carter Avenue also run through the western and eastern portions of the project site, respectively. However, public access along North Sunnyside Avenue and Carter Avenue currently terminates at gates along the project site boundary. Viewers along these roadways would primarily consist of motorists, bicyclists, and pedestrians associated with the existing residential neighborhood south of the project site.

The Bailey Canyon Wilderness Park is located directly east of the project site and provides public access for recreationists who may be afforded some views of the project site. However, Bailey Canyon Wilderness Park is concentrated with many existing, mature trees which obstruct significant, widespread views of the project site from this area. Existing ornamental trees also line either side of Carter Avenue between Bailey Canyon Wilderness Park and the majority of the project site. Various hiking trails are also located north of the project site within the San Gabriel Mountains. Viewers from these trails would be afforded expansive views overlooking the project site, the City, and the adjacent communities.

4.1.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to aesthetics relevant to the proposed project.

State

California Scenic Highway Program

The California Scenic Highway Program was created in 1963 with the intent "to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment." The state laws that govern the Scenic Highway Program are Sections 260 through 263 of the Streets and Highways Code. A highway may be designated scenic based on the natural landscape visible by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the views of the highway. The Scenic Highway Program includes both officially designated scenic highways and highways that are eligible for designation. It is the responsibility of local jurisdictions to apply for scenic highway approval, which requires the adoption of a Corridor Protection Program (Caltrans 2020). In addition, once a scenic highway is designated, the local jurisdiction is responsible for regulating development within the scenic highway corridor. There is no designated or eligible state Scenic Highway within the project site.

Local

City of Sierra Madre General Plan

The General Plan includes the following objectives and policies relevant to the proposed project with regard to aesthetics (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Chapter One: Land Use

Policy L6.2: Ensure that any new or expanded structures in residential neighborhoods do not unreasonably obstruct significant mountain or basin views.

Objective L17: Protecting views to and from hillside areas in order to maintain the image and identity of the City as a village of the foothills.

Policy L17.1: Require the use of natural materials where allowed and earth tone colors for all structures to blend in with the natural landscape and natural chaparral vegetative growth.

Policy L17.2: Require that all development be designed to reflect the contours of the existing land form using techniques such as split pads, detached secondary structures (such as garages), and avoiding the use of excessive cantilevers.

Policy L17.3: Require that all development preserves, to the maximum extent possible, significant features of the natural topography, including swales, canyons, knolls, ridge lines, and rock outcrops.

Policy L17.5: Require that exterior lighting be directed away from adjacent properties and the night sky.

Objective L20: Maintaining the massing and scale of the existing block and existing structures on sites.

Policy L20.1: Require that new residential development be compatible with and complement existing structures on the block:

a. Maintain existing front yard setbacks on the block;
b. Use compatible building materials, colors, and forms;
c. Minimize front yard paving and prohibit front yard parking.

Chapter Two, Section Three: Dark Sky

The City recognizes the preservation of the night sky to perpetuate the view of the stars as a valuable community resource. Therefore, the General Plan includes the City's Dark Sky program, which includes the following goals, objectives, and policies:

Goal 1. Protection of the starlit sky to avoid deterioration of the viewing of dark sky as it is a valuable resource.

Goal 3. Consideration of neighboring properties and the community as a whole with regard to exterior lighting through the reduction of negative light impacts in the design of new exterior lighting schemes.

Objective R6: Reducing light pollution, trespass, and unnecessary glare through the use of light shielding methods, and elimination of lighting that is misdirected, excessive, or unnecessary.

Policy R6.1: Require that all new development projects utilize light fixtures that shield the light source so that light is cast downward to avoid light spillage off site or upward into the sky.

Policy R6.2: Discourage continuous all-night exterior lighting and encourage motion-sensored lighting.

Policy R6.3: Encourage the use of fixtures like the "shoe box" design that are capable of providing accurate light patterns, and can often be used for lighting without spilling onto the neighboring property and upward into the sky.

Objective R7: Minimizing lighting use and intensity, utilizing the most efficient lighting technology.

Policy R7.2: The City shall, whenever possible, turn off the lights or use motion sensor controlled lighting and encourage the public to do the same.

Objective R8: The reasonable use of outdoor lighting for nighttime safety, utility, security, and enjoyment while preserving the ambiance of the night.

Policy R8.1: Encourage outdoor lighting to be designed and installed in a manner that confines the direct lighting rays to the property upon which the lighting is installed so as to protect adjacent and nearby residential districts and public rights-of- way, and reduce "skyglow."

Policy R8.2: Lighting in and near residential areas shall be minimal and shielded to prevent nuisance glare.

Policy R8.3: Lighting attached to single-family home structures should not exceed the height of the eave, and residential lighting pole height restrictions can be considered to control light trespass on adjacent properties and upward into the sky.

Policy R8.4: Provide adequate illumination of all streets, alleys, and public areas.

4.1.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to aesthetics are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to aesthetics would occur if the project would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
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.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.4 Project Design Features

The following project design features (PDFs) would be implemented as part of the proposed project and would be applicable to aesthetics:

PDF-AES-1 Lighting at the project site shall comply with Section 3.8.6(A.xii) of the Specific Plan, which includes the following development standards:

- All lighting of the building, landscaping, parking area, or similar facilities shall be in compliance with the City's Dark Sky Program.
- Lighting shall be hooded and directed downward to reflect away from adjoining properties.
- Lighting shall be confined to the lot boundaries and not be oriented towards neighboring properties to protect privacy.
- Pedestrian-scaled street lighting shall be provided within the proposed park areas pedestrian routes of travel to enable visibility and safety.

In addition, skylights proposed at the project site shall comply with Section 5.5.6 of the Specific Plan, which includes the following architectural design requirements:

- Skylight materials and elements should be consistent with the selected architectural style and be fully integrated into the roof design.
- Skylights shall employ the following strategies:
  - Glazing should be clear, flat, or non-reflective.
  - Tubular, domed, or "bubble" skylights shall not be used.
  - Skylights should be mounted on the same plan and angle as the roof.
- To eliminate skyward glare, interior lights should not be oriented upward through skylights.

PDF-AES-2 Solar panels shall comply with requirements outlined in Section 5.5.6 of the Specific Plan which includes the following, to reduce potential for glare:

- Solar panels shall include materials and elements that are consistent with the selected architectural style and shall be fully integrated into the roof design.
- Solar panels shall be oriented to the south to maximize efficiency and establish visual consistency across buildings.
- Flashing, sheet metal, and framing should be colored to match the roof material.

4.1.5 Impacts Analysis

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

As discussed in Section 4.1.1, Existing Conditions, the General Plan identifies the San Gabriel Mountains as contributing to the overall aesthetic quality of the City. Views of the San Gabriel Mountains are afforded throughout the City. Additionally, various hiking trails exist within the southern foothills of the San Gabriel Mountains which provide expansive views of the City and surrounding cities. The project site is located approximately 460 feet south of the San Gabriel Mountains and the foothills begin just north of the Mater Dolorosa Retreat Center. As such, views of the San Gabriel Mountains are afforded from the project site and surrounding public vantage points, including surrounding roadways North Sunnyside Avenue, Crestvale Drive, and Carter Avenue. North Sunnyside Avenue and Carter Avenue also run through the project site; however, public access on these two roadways currently terminates at gates along the southern end of the project site boundary. Public access along Crestvale Avenue terminates at a cul-de-sac adjacent to the southern boundary of the project site. Viewers along these roadways would primarily consist of motorists, bicyclists, and pedestrians associated with the existing residential neighborhood south of the project site. However, public access along all of these roadways currently terminates at the project site, which limits the number of potential viewers as less traffic occurs on these roadways and they are not through streets. With implementation of the proposed project, public access along North Sunnyside Avenue would be extended into the project site, and Carter Avenue would be publicly accessible from within the project site are would serve as secondary access to the project site. Viewers along the publicly accessible extended portions of North Sunnyside Avenue would be associated with the proposed project, including the neighborhood park and residential development.

The proposed project would include a neighborhood park at the southernmost portion of the project site, where public access along these three roadways currently terminates. Viewers located along these roadways would be afforded views of the neighborhood park in the foreground and the San Gabriel Mountains in the background. Views of the proposed residential development would be visible beyond the neighborhood park from these roadways. However, once developed, the project site would have an elevation ranging from 1,200 feet AMSL in the north to 1,110 feet AMSL in the south, and the proposed project would limit residential units to one to two stories in height. For contrast, the closest foothills of the San Gabriel Mountains to the project site range from 1,500 to 2,000 feet above mean sea level and continue rising in elevation farther north. Therefore, due to the dramatic elevation rise of the San Gabriel Mountains beyond the Mater Dolorosa Retreat Center, the residential development would not obstruct views of the mountain range from these roadways.

The Bailey Canyon Wilderness Park is also located directly east of the project site. Viewers at the Bailey Canyon Wilderness Park would consist of recreationists who would be afforded views of the San Gabriel Mountains to the north. The proposed project would not obstruct views of the San Gabriel Mountains from the Bailey Canyon Wilderness Park as the project site is located west of the wilderness park and the San Gabriel Mountains are located to the north.

Views of the project site may also be afforded to recreationists within the Bailey Canyon Wilderness Park. However, Bailey Canyon Wilderness Park is concentrated with many existing, mature trees that obstruct significant, widespread views of the project site from this area. In addition, the proposed neighborhood park would be adjacent to the Bailey Canyon Wilderness Park across Carter Avenue, which would include trees and landscaping as shown in Figure 3-3, Proposed Park Conceptual Plan, in Chapter 3, Project Description. Proposed trees and landscaping within the eastern portion of the neighborhood park would help to buffer views of the proposed residential uses from Bailey Canyon Wilderness Park. While new residences may still be partially visible from Bailey Canyon Wilderness Park, neither the project site nor Bailey Canyon Wilderness Park are identified as protected hillside areas or scenic vistas within the City's General Plan. In addition, the design guidelines of the Specific Plan outline site planning and design, architectural design, and landscape design standards that would be implemented as a design of the project in order to ensure that development is consistent with surrounding development and that the proposed project would not significantly degrade views of the project site from Bailey Canyon Wilderness Park. Therefore, views of the project site from Bailey Canyon Wilderness Park would not be considered changes to or from a scenic vista.

Various hiking trails exist within the southern foothills of the San Gabriel Mountains which provide expansive views of the project site, the City, and the surrounding cities. The closest trails are located approximately 1 mile northeast of the project site. From this distance and elevation, the project site and much of the City would be visible for recreationists along portions of these trails. Development of the proposed project would introduce residential uses and a neighborhood park to a largely undeveloped site. As such, the visual character of the project site would change on the project site and this change would be visible from these trails. However, the proposed uses are congruent with the surrounding land uses, which are largely composed of residential developments similar to the proposed project. While the proposed project would be visible from these trails, a substantial adverse effect would not occur on views from the San Gabriel Mountains because the proposed project would appear to be consistent with the surrounding visual environment. Therefore, the proposed project would not result in a substantial adverse effect on a scenic vista, including views of and from the San Gabriel Mountains, and impacts would be **less than significant**.

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

As discussed in Section 4.1.1, there are no officially designated scenic highways that pass by the project site according to the Caltrans Scenic Highway Mapping System (Caltrans 2020). The following is the closest designated scenic highway:

- California SR-2 from La Cañada Flintridge to San Bernardino County, located approximately 6.75 miles north of the project site.

The following are the closest eligible scenic highways:

- I-210 from I-5 to SR-134, located approximately 5.5 miles west of the project site.
- California SR-39 from I-210 in Azusa to SR-2, located approximately 8.75 miles east of the project site.

The project site is not located within the vicinity of an officially designated or eligible state scenic highway. Additionally, there are no locally designated scenic roadways in the City. Therefore, implementation of the proposed project would not substantially damage scenic resources within a state scenic highway. **No impact** would occur.

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?*

CEQA Section 21071 defines an "urbanized area" as "(a) an incorporated city that meets either of the following criteria: (1) has a population of at least 100,000 persons, or (2) has a population of less than 100,000 persons if the population of that City and not more than two contiguous incorporated cities combined equals at least 100,000 persons." As of July 1, 2019, the US Census Bureau estimated the population of the City to be 10,743 persons (US Census Bureau 2019). However, the City is contiguous with the City of Pasadena, which the US Census Bureau estimated the population to be 141,029 persons as of July 1, 2019 (US Census Bureau 2019). Thus, the City would be considered an urbanized area per CEQA and the first portion of Threshold 3, related to changes in the visual character or quality of public views of the site and its surroundings, would not apply to the proposed project aesthetics analysis. As such, this analysis focuses on the second portion of Threshold 3, regarding whether the project would conflict with applicable zoning and other regulations governing scenic quality, for projects in urbanized areas. It should be noted that, although private views are not protected by CEQA, the design guidelines of the Specific Plan outline site planning and design, architectural design, and landscape design standards that would be implemented as a design of the project to ensure that visual character and quality of public and private views are not degraded. This includes provision of a landscape buffer between the Mater Dolorosa Retreat Center's existing amphitheater and lookout point and the proposed homes on the northern end of the project site.

Zoning

The project site is currently zoned Institutional, and the existing General Plan land use designation is also Institutional. The proposed project would amend the City's zoning code and City's General Plan to change the project site zoning to Specific Plan and the General Plan land use designation to Specific Plan. These zoning and land use designation changes would allow for the development of the proposed residential development and neighborhood park. If approved, the proposed project would not conflict with the applicable zoning and land use designation, as the amendments to the General Plan and zoning code would be approved concurrently with the proposed project.

General Plan

As discussed in Section 4.1.1, the General Plan identifies the San Gabriel Mountains as contributing to the overall aesthetic quality of the City. Section 4.1.2, Relevant Plans, Policies, and Ordinances, includes General Plan objectives and policies as they relate to aesthetics. Objectives and policies specifically related to scenic quality are as follows (City of Sierra Madre 2015):

Policy L6.2: Ensure that any new or expanded structures in residential neighborhoods do not unreasonably obstruct significant mountain or basin views.

Although the project site does not contain any identified important public viewpoints, it is located approximately 460 feet south of the San Gabriel Mountains. As discussed under Threshold 1 above, implementation of the proposed project would not result in a substantial adverse effect on a scenic vista, including views of and from the San Gabriel Mountains, in compliance with General Plan Policy L6.2. In addition, the dedication of open space to the City would preserve this hillside area in perpetuity, therefore preserving undeveloped views of the hillside from the City. Therefore, the proposed project would not conflict with General Plan objectives and policies governing scenic quality. Therefore, impacts would be **less than significant**.

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

The project site is currently largely undeveloped, and the only sources of existing on-site lighting include light posts in the southern portion of the site, at the gate where public access along North Sunnyside Avenue terminates at the project site. Therefore, development of the proposed project would introduce new sources of lighting and glare on the project site. Lighting within the project site would be typical of a residential land use, including street lighting, lighting for the neighborhood park, and exterior lighting on residences. New sources of glare within the project site would include windows on residences.

The Specific Plan contains design guidelines for implementation of the proposed project, which includes rules for lighting on the project site. In compliance with the General Plan objectives and policies related to lighting as discussed in Section 4.1.2, the Specific Plan for proposed project regulates lighting to preserve dark skies while maintaining adequate lighting for safety. These guidelines shall be implemented into the design of the project, consistent with **PDF-AES-1** (see Section 4.1.4, Project Design Features). More specifically, as discussed in the Specific Plan, lighting at the project site shall be in compliance with the City's Dark Sky Program; hooded and directed downward to reflect away from adjoining properties; and confined to the lot boundaries and not be oriented towards neighboring properties. In addition, pedestrian-scaled street lighting shall be provided within the proposed park areas pedestrian routes of travel to enable visibility and safety. This would result in shielding to avoid light spillage, consistent with General Plan Objective R6, Policy R6.1, and Policy R8.2. In addition, per Section 5.5.3 of the Specific Plan, to preserve dark skies, lighting at the project site should only be used when needed; only light the area that needs it; be no brighter than necessary; minimize blue light emissions; and be fully shielded and pointing downward. This would be consistent with General Plan Objective R6; Policy R8.2, which requires that lighting in and near residential areas shall be minimal and shielded to prevent nuisance glare; and Policy R6.2, which discourages continuous all-night exterior lighting and encourage motion-sensored lighting (please see Table 4.11-1 for a consistency analysis with all applicable General Plan policies). Therefore, lighting on the project site, including new street lighting, would be shielded and aimed downward to avoid light spillage and glare, and would not adversely affect day or nighttime views in the area.

Additionally, sources of glare introduced on the project site would primarily include windows associated with the residential development. However, the project site would not contain large expanses of material, such as glass or metal, that would result in glare. Thus, glare from windows would be minimal and localized to the areas surrounding each residential unit. The proposed project may also include solar panels on residential rooftops. The design and orientation of the proposed solar panels are not known at this time. However, as outlined in **PDF-AES-2**, solar panels shall comply with requirements outlined in the Specific Plan, and shall be oriented to the south to maximize efficiency and establish visual consistency across buildings (see Section 4.1.4). These requirements would also ensure potential impacts associated with glare would not occur. The City and adjacent cities including Pasadena are urbanized and currently generate substantial night lighting. The housing and buildings in the surrounding area include windows and other glass or metal expanses that can result in localized glare. Surrounding residential land uses contain lighting typical of an urban setting, including but not limited to, street lighting and security lighting. While the proposed project would result in new sources of light and glare, these would be similar to the surrounding land uses. Furthermore, with compliance with the guidelines of the Specific Plan, these new sources of light and glare would not result in adverse day or nighttime views in the area. Impacts would be **less than significant**.

4.1.6 Mitigation Measures

No mitigation measures would be required.

4.1.7 Level of Significance After Mitigation

No mitigation measures would be required. Impacts related to aesthetics would be less than significant.

4.2 Agriculture and Forestry Resources

This section describes the existing agriculture and forestry conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.2.1 Existing Conditions

Project Site

The project site currently contains vacant and undeveloped land with existing roads and infrastructure associated with the Mater Dolorosa Retreat Center, located to the north of the project site. North Sunnyside Avenue runs across the western portion of the project site and Carter Avenue runs adjacent to the eastern project site boundary. Surrounding land uses include the Bailey Canyon and Bailey Canyon Wilderness Park to the east, existing single-family residential developments to the south and west, and the Mater Dolorosa Retreat Center to the north. The project site contains a variety of trees, shrubs, and grasses.

According to the California Department of Conservation (DOC) California Important Farmland Finder, the entire City of Sierra Madre (City), as well as most of Los Angeles County (County), is not in an area mapped by the Farmland Mapping and Monitoring Program (FMMP) (DOC 2016). This is due to the built up and highly urbanized character of the City and surrounding communities. As such, there are no important farmlands on the project site or within the City. Additionally, the City does not have any lands designated or zoned as agriculture, forest land, timber land, or timber production (City of Sierra Madre 2015).

4.2.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to agriculture and forestry resources relevant to the proposed project.

State

Department of Conservation Farmland Mapping and Monitoring Program

In response to the need to assess the location, quality, and quantity of agricultural lands and conversion of such lands over time, in 1982, the California Department of Conservation established the FMMP. The goal of the FMMP is to provide consistent and impartial data to decision makers to assess the suitability of agricultural lands in California. The FMMP categories are based on local soil characteristics and irrigation status, with the best quality land identified as Prime Farmland or Farmland of Statewide Importance. The FMMP classifies land into five mapping categories based on soil and climatic conditions: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. In addition, the FMMP identifies non-agricultural lands as either Urban and Built-Up Land or Other Land. Important Farmland Maps are updated every 2 years.

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act (Government Code Section 51200 et seq.), enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to the full potential market value of the land. The goal of the Williamson Act program is to encourage preservation of agricultural land and prevent its premature conversion to urban uses.

California Public Resources Code

The California Public Resources Code defines "forest land" and "timberland" as follows:

> 'Forest land' is land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits (California Public Resources Code Section 12200[g]).
>
> 'Timberland' means land, other than land owned by the federal government and land designated by the board [State Board of Forestry and Fire Protection] as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others (California Public Resources Code Section 4526).

California Government Code

The California Government Code defines "timberland" zoned "timberland production" as follows (California Government Code Section 51100 et seq.):

> 'Timberland production zone' or 'TPZ' means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, 'timberland preserve zone' means 'timberland production zone.

Local

There are no local plans, policies, or ordinances related to agriculture and forestry resources relevant to the proposed project.

4.2.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to agriculture and forestry resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to agriculture and forestry resources would occur if the project would:

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

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

4.2.4 Project Design Features

There are no project design features that apply to agriculture and forestry resources.

4.2.5 Impacts Analysis

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?

As described in Section 4.2.1, Existing Conditions, according to the DOC California Important Farmland Finder, the entire City, including the project site, is in an area not mapped by the FMMP. This is largely due to the built up and highly urbanized character of the City and surrounding communities. As such, there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) within the project site (DOC 2016). Thus, no important farmland would be converted to a non-agricultural use. **No impact** would occur.

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

The project site is not designated or zoned for agricultural use and is not subject to a Williamson Act contract. As such, the proposed project would not conflict with a Williamson Act contract. **No impact** would occur.

3. Would the project 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))?

The project site is both zoned and contains a General Plan land use designation of Institutional. There is no land within the City zoned or designated as forest land, timber land, or timber production (City of Sierra Madre 2015). As such, the proposed project would not conflict with zoning for forest land or timberland production. **No impact** would occur.

4. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

There is no land designated as forest land on the project site or within the City. As such, the proposed project would not result in the loss of forest land or conversion of forest land to a non-forest use. **No impact** would occur.

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?

As described under the above thresholds, the project site is zoned as Institutional and there are no agricultural or forest lands on the project site or within the City. The proposed project would authorize development of a residential

development and neighborhood park in an urbanized area surrounded by existing residential development to the south and west, the Mater Dolorosa Retreat Center to the north, and Bailey Canyon Wilderness Park to the east. The proposed project would not involve changes to the existing environment which, due to their location or nature, could result in the conversion of farmland to a non-agricultural use or forest land to a non-forest use. **No impact** would occur.

4.2.6 Mitigation Measures

No impacts to agriculture and forestry resources would occur; therefore, no mitigation is required.

4.2.7 Level of Significance After Mitigation

No impacts to agriculture and forestry resources would occur; therefore, no mitigation is required.

4.3 Air Quality

This section describes the existing air quality conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. An Air Quality and Greenhouse Gas Emissions Analysis Technical Report that evaluated and identified potential air quality impacts associated with the project was prepared by Dudek in November 2020 and is included as Appendix B of this Environmental Impact Report (EIR).

4.3.1 Existing Conditions

The project site is located within the South Coast Air Basin (SCAB). The SCAB is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

4.3.1.1 Meteorological and Topographical Conditions

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants. The SCAB's air pollution problems are a consequence of the combination of emissions from the nation's second largest urban area, meteorological conditions adverse to the dispersion of those emissions, and mountainous terrain surrounding the SCAB that traps pollutants as they are pushed inland with the sea breeze (SCAQMD 2017). Meteorological and topographical factors that affect air quality in the SCAB are described below.[1]

Climate

The SCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The general region lies in the semi-permanent high-pressure zone of the eastern Pacific; as a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the SCAB is a function of the area's natural physical characteristics (e.g., weather and topography) and of manufactured influences (e.g., development patterns and lifestyle). Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in the SCAB. The average annual temperature varies little throughout the SCAB, averaging 75°F. However, with a less-pronounced oceanic influence, the eastern inland portions of the SCAB show greater variability in annual minimum and maximum temperatures. All portions of the SCAB have recorded temperatures over 100°F in recent years. Although the SCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70% at the coast and 57% in the eastern part of the

[1] The discussion of meteorological and topographical conditions of the SCAB is based on information provided in the *Final 2016 Air Quality Management Plan* (SCAQMD 2017).

SCAB. Precipitation in the SCAB is typically 9–14 inches annually and is rarely in the form of snow or hail because of typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the SCAB.

In the City, the climate is typically warm during summer when temperatures tend to be in the 80s and cool during winter when temperatures tend to be in the 50s. The warmest month of the year is August with an average maximum temperature of 88.5°F, whereas, the coldest month of the year is January with an average minimum temperature of 45.1°F. The wettest month of the year is January with an average rainfall of 4.93 inches (WRCC 2020).

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen [NO_x][2]) react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind of the emission sources. Southern California also has abundant sunshine, which drives the photochemical reactions that form pollutants such as ozone (O_3) and a substantial portion of fine particulate matter ($PM_{2.5}$, particles less than 2.5 microns in diameter). In the SCAB, high concentrations of O_3 are normally recorded during the late spring, summer, and early autumn months, when more intense sunlight drives enhanced photochemical reactions. Due to the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of Southern California.

Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air mix and disperse into the upper atmosphere. However, the Southern California region frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion (a layer of warm, dry air overlaying cool, moist marine air) is a normal condition in coastal Southern California. The cool, damp, and hazy sea air capped by coastal clouds is heavier than the warm, clear air, which acts as a lid through which the cooler marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above mean sea level (amsl), the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet amsl, the terrain prevents the pollutants from entering the upper atmosphere, resulting in the pollutants settling in the foothill communities. Below 1,200 feet amsl, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours.

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

As with other cities within the SCAB, the City is susceptible to air inversions, which trap a layer of stagnant air near the ground where pollutants are further concentrated. These inversions produce haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources. Elevated particles less than 10 microns in diameter (PM_{10}) and $PM_{2.5}$ concentrations can occur in the SCAB throughout the year but occur most frequently in fall and winter. Although there are some changes in

[2] NO_x is a general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen.

emissions by day of the week and season, the observed variations in pollutant concentrations are primarily the result of seasonal differences in weather conditions.

4.3.1.2 Pollutants and Effects

4.3.1.2.1 Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs.[3] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_x and VOCs. The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric O_3) and at the Earth's surface in the troposphere (ground-level O_3).[4] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

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

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

[3] The descriptions of each of the criteria air pollutants and associated health effects are based on the EPA's Criteria Air Pollutants (EPA 2016a) and the CARB Glossary of Air Pollutant Terms (CARB 2016a).

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

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016b).

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

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

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

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

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ is so tiny that it can penetrate

deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and older adults may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ (EPA 2009).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and, in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

4.3.1.2.2 Non-Criteria Air Pollutants

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

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

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

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

Valley Fever. Coccidioidomycosis, more commonly known as "valley fever," is an infection caused by inhalation of the spores of the *Coccidioides immitis* fungus, which grows in the soils of the southwestern United States. When fungal spores are present, any activity that disturbs the soil, such as digging, grading, or other earth-moving operations, can cause the spores to become airborne and thereby increase the risk of exposure. The ecologic factors that appear to be most conducive to survival and replication of the spores are high summer temperatures, mild winters, sparse rainfall, and alkaline sandy soils.

Valley fever is not considered highly endemic to Los Angeles County. Per the County of Los Angeles Department of Public Health, the total number of cases in the City for coccidioidomycosis cases is 43 in 2017, or 9.2 cases per 100,000 people per year (Los Angeles County Department of Public Health 2017). Statewide incidences in 2017 were 22.5 per 100,000 people (CDPH 2019).

Even if present at a site, earth-moving activities may not result in increased incidence of valley fever. Propagation of *Coccidioides immitis* is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells. *Coccidioides immitis* spores can be released when filaments are disturbed by earth-moving activities, although receptors must be exposed to and inhale the spores to be at increased risk of developing valley fever. Moreover, exposure to *Coccidioides immitis* does not guarantee that an individual will become ill—approximately 60% of people exposed to the fungal spores are asymptomatic and show no signs of an infection (USGS 2000).

4.3.1.3 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). The SCAQMD identifies sensitive receptors as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The closest off-site sensitive receptors to the project site include residences located adjacent to the south and western boundaries of the project site.

4.3.1.4 Regional and Local Air Quality Conditions

4.3.1.4.1 South Coast Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are re-designated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than the NAAQS. Table 4.3-1 depicts the current attainment status of the project site with respect to the NAAQS and CAAQS, as well as the attainment classifications for the criteria pollutants are outlined in Table 4.3-1.

Table 4.3-1. South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	National Standards	*California Standards*
Ozone (O_3) – 1-hour	No National Standard	**Nonattainment**
Ozone (O_3) – 8-hour	**Extreme Nonattainment**	**Nonattainment**
Nitrogen Dioxide (NO_2)	Unclassifiable/Attainment	Attainment

Table 4.3-1. South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	National Standards	*California Standards*
Carbon Monoxide (CO)	Attainment/Maintenance	Attainment
Sulfur Dioxide (SO_2)	Unclassifiable/Attainment	Attainment
Coarse Particulate Matter (PM_{10})	Attainment/Maintenance	**Nonattainment**
Fine Particulate Matter ($PM_{2.5}$)	**Serious Nonattainment**	**Nonattainment**
Lead (Pb)	**Nonattainment**	Attainment
Hydrogen Sulfide	No National Standard	Unclassified
Sulfates	No National Standard	Attainment
Visibility-Reducing Particles	No National Standard	Unclassified
Vinyl Chloride	No National Standard	No designation

Sources: EPA 2016c (national); CARB 2016c (California).
Notes: Bold text = not in attainment; Attainment = meets the standards; Attainment/Maintenance = achieve the standards after a nonattainment designation; Nonattainment = does not meet the standards; Unclassified or Unclassifiable = insufficient data to classify; Unclassifiable/Attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

In summary, the SCAB is designated as a nonattainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards. The SCAB is designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. The SCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While the SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard (EPA 2016c; CARB 2016c).

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

4.3.1.4.2 Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. The SCAQMD monitors local ambient air quality at the project site. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2017 to 2019 are presented in Table 4.3-2. The Pasadena monitoring station, located at 752 S. Wilson Avenue, Pasadena, California 91106, is the nearest air quality monitoring station to the project site, located approximately 4.5 miles southwest from the project site. The data collected at this station are considered representative of the air quality experienced in the project vicinity. Air quality data for CO, O_3, NO_2, and $PM_{2.5}$ from the Pasadena monitoring station are provided in Table 4.3-2. Because SO_2 and PM_{10} are not monitored at the Pasadena monitoring station, SO_2 and PM_{10} measurements were taken from the Los Angeles – North Main Street monitoring station (1630 N. Main Street, Los Angeles, California 90012, approximately 11.9 miles southwest from the project site). The number of days exceeding the ambient air quality standards are also shown in Table 4.3-2.

Table 4.3-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2017	*2018*	*2019*	*2017*	*2018*	*2019*
Ozone (O_3)										
Pasadena	ppm	Maximum 1-hour concentration	California	0.09	0.139	0.112	0.120	18	8	11
	ppm	Maximum 8-hour concentration	California	0.070	0.100	0.091	0.098	38	20	29
			National	0.070	0.100	0.090	0.098	36	19	24
Nitrogen Dioxide (NO_2)										
Pasadena	ppm	Maximum 1-hour concentration	California	0.18	0.072	0.068	0.059	0	0	0
			National	0.100	0.072	0.068	0.059	0	0	0
	ppm	Annual concentration	California	0.030	0.015	0.014	0.013	0	0	0
			National	0.053	0.015	0.014	0.013	0	0	0
Carbon Monoxide (CO)										
Pasadena	ppm	Maximum 1-hour concentration	California	20	2.2	2.0	1.5	0	0	0
			National	35	2.2	2.0	1.5	0	0	0
	ppm	Maximum 8-hour concentration	California	9.0	1.7	1.4	1.2	0	0	0
			National	9	1.7	1.4	1.2	0	0	0
Sulfur Dioxide (SO_2)										
Los Angeles – North Main Street	ppm	Maximum 1-hour concentration	National	0.075	0.006	0.018	0.010	0	0	0
	ppm	Maximum 24-hour concentration	National	0.14	0.002	0.001	0.001	0	0	0
	ppm	Annual concentration	National	0.030	0.0004	0.0003	0.0003	0	0	0

Table 4.3-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2017	*2018*	*2019*	*2017*	*2018*	*2019*
Coarse Particulate Matter (PM_{10})[a]										
Los Angeles – North Main Street	μg/m³	Maximum 24-hour concentration	California	50	96.2	81.2	93.9	(ND) 40	(31.8) 31	(ND) 15
			National	150	64.6	68.2	62.4	(0.0) 0	(0.0) 0	(0.0) 0
	μg/m³	Annual concentration	California	20	ND	34.0	ND	(0.0) 0	(0.0) 0	(0.0) 0
Fine Particulate Matter ($PM_{2.5}$)[a]										
Pasadena	μg/m³	Maximum 24-hour concentration	National	35	22.8	32.5	41.8	(0.0) 0	(0.0) 0	(3.1) 1
	μg/m³	Annual concentration	California	12	9.6	10.2	9.1	(0.0) 0	(0.0) 0	(0.0) 0
			National	12.0	9.7	10.3	8.7	(0.0) 0	(0.0) 0	(0.0) 0

Sources: CARB 2020; EPA 2020.

Notes: — = not available; μg/m³ = micrograms per cubic meter; ND = insufficient data available to determine the value; ppm = parts per million

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (https://www.epa.gov/outdoor-air-quality-data) represent the highest concentrations experienced over a given year.

Exceedances of national and California standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed national or California standards during the years shown. There is no national standard for 1-hour O_3, annual PM_{10}, or 24-hour SO_2, nor is there a California 24-hour standard for $PM_{2.5}$.

Pasadena Monitoring Station is located at 752 S. Wilson Avenue, Pasadena, California 91106.

Los Angeles – North Main Street Monitoring Station is located 1630 N. Main Street, Los Angeles, California 90012.

[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

4.3.2 Relevant Plans, Policies, and Ordinances

Federal

Criteria Air Pollutants

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

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the NAAQS within mandated time frames.

Hazardous Air Pollutants

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

State

Criteria Air Pollutants

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

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. As stated previously, an ambient air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public's health. For each pollutant, concentrations must be below the relevant CAAQS before a basin can attain the corresponding CAAQS. Air quality is considered “in attainment” if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded.

California air districts have based their thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health.

All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 4.3-3.

Table 4.3-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 µg/m³)	0.100 ppm (188 µg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m³)
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
Lead[j,k]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m³)	—	—
Sulfates	24- hours	25 µg/m³	—	—

Table 4.3-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016d.

Notes: μg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter; ppm = parts per million by volume; O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

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

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m³ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

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

d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

e National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

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

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

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

i 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 PM_{10} standards (primary and secondary) of 150 μg/m³ were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

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

k 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 standard are approved.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with

AB 2728, the state list includes the (federal) HAPs. In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several Airborne Toxic Control Measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local

South Coast Air Quality Management District

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

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

and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy. These "win-win" scenarios are key to implementation of this 2016 AQMP with broad support from a wide range of stakeholders.

Applicable Rules

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

- **Rule 401 – Visible Emissions:** This rule establishes the limit for visible emissions from stationary sources.
- **Rule 402 – Nuisance:** This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.
- **Rule 403 – Fugitive Dust:** This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust.
- **Rule 431.2 – Sulfur Content of Liquid Fuels:** The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose of reducing the formation of SO_x and particulates during combustion and of enabling the use of add-on control devices for diesel-fueled internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile sources.
- **Rule 461 – Gasoline Transfer and Dispensing:** This rule requires testing of vapor recovery systems for gasoline dispensing facilities from certified vapor recovery testing companies and contractors. This rule applies to the transfer of gasoline from any tank truck, trailer, or railroad tank car into any stationary storage tank or mobile fueler, and from any stationary storage tank or mobile fueler into any mobile fueler or motor fuel tank.
- **Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines:** This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_x, VOCs, and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule because they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.
- **Rule 1113 – Architectural Coatings:** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated metropolitan planning organization for the Southern California region and is the largest metropolitan planning organization in the United States.

With respect to air quality planning and other regional issues, SCAG has prepared the 2008 Regional Comprehensive Plan: Helping Communities Achieve a Sustainable Future (2008 RCP) for the region (SCAG 2008). The 2008 RCP sets the policy context in which SCAG participates in and responds to the SCAQMD air quality plans and builds off the SCAQMD AQMP processes that are designed to meet health-based criteria pollutant standards in several ways (SCAG 2008). First, it complements AQMPs by providing guidance and incentives for public agencies to consider best practices that support the technology-based control measures in AQMPs. Second, the 2008 RCP emphasizes the need for local initiatives that can reduce the region's GHG emissions that contribute to climate change, an issue that is largely outside the focus of local attainment plans. Third, the 2008 RCP emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

On April 7, 2016, SCAG's Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders within Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. In June 2016, SCAG received its conformity determination from the Federal Highway Administration and the Federal Transit Administration indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 Federal Transportation Improvement Program Consistency Amendment through Amendment 15-12 have been met (SCAG 2016). The SCAQMD 2016 AQMP applies the updated SCAG growth forecasts assumed in the 2016 RTP/SCS.

SCAG has developed Connect SoCal, the 2020–2045 RTP/SCS, which is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals (SCAG 2020). Connect SoCal charts a path toward a more mobile, sustainable, and prosperous region by making connections between transportation networks, planning strategies, and the people whose collaboration can improve the quality of life for Southern Californians. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. On May 7, 2020, SCAG's Regional Council adopted Connect SoCal for federal transportation conformity purposes only. The SCAG 2020–2045 RTP/SCS was adopted on September 3, 2020.

City of Sierra Madre

The Air Quality Element of the City's General Plan (City of Sierra Madre 2015) includes issues and policies that would be applied to the project related to air quality. These applicable policies are listed below. The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Policy 22.1: Cooperate with the SCAQMD and incorporate the provisions of the AQMP.

Policy 22.2: Prohibit the development of land uses and land use practices which would contribute significantly to poor air quality.

Policy 22.3: Establish controls and monitor uses in the City which contain operations or materials characterized by air pollutants which individually or cumulatively could significantly add to the air basin's

degradation (e.g., furniture manufacturers using paints and finishes, automobile repair, printing, and reproduction, and dry cleaners).

Policy 22.4: Encourage and participate in regional initiatives and programs to improve the South Coast Air Basin's air quality.

Policy 23.5: Provide opportunities through appropriate zoning for the development of residential units in concert with commercial uses.

Policy 24.2: Require dust abatement measures during grading and construction operations. This may include use of reclaimed water or other methods to control fugitive dust.

Policy 24.3: Develop and enforce a fugitive dust control ordinance that regulates the following: visible dust emissions, soil stabilization, the carrying and tracking of dirt off site, unpaved access and haul roads, storage piles and bulk materials, demolition, and dust control plans; the ordinance should include penalties to encourage compliance.

4.3.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to air quality is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this air quality analysis, a significant impact would occur if the project would (14 CCR 15000 et seq.):

1. Conflict with or obstruct implementation of the applicable air quality plan.
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.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether the project would have a significant impact on air quality.

The SCAQMD has established Air Quality Significance Thresholds, as revised in March 2015, which set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality under project-level and cumulative conditions. The quantitative air quality analysis provided herein applies the SCAQMD thresholds identified in Table 4.3-4 to determine the potential for the project to result in a significant impact under CEQA.

Table 4.3-4. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (pounds per day)*	*Operation (pounds per day)*
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150

Table 4.3-4. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥10 in 1 million Cancer Burden >0.5 excess cancer cases (in areas ≥1 in 1 million) Chronic and acute hazard index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[c]		
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)	
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
PM_{10} 24-hour average PM_{10} annual average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation) 1.0 μg/m³	
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation)	

Source: SCAQMD 2019.

Notes: VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; SCAQMD = South Coast Air Quality Management District; NO_2 = nitrogen dioxide; ppm = parts per million; μg/m³ = micrograms per cubic meter.

Greenhouse gas emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not include included in Table 4.3-4 as they are addressed within the greenhouse gas emissions analysis and not the air quality study.

[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

[b] TACs include carcinogens and noncarcinogens.

[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.

[d] Ambient air quality threshold are based on SCAQMD Rule 403.

The evaluation of whether the project would conflict with or obstruct implementation of the applicable air quality plan is based on the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993), Chapter 12, Sections 12.2 and 12.3. The first criterion assesses if the project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP, which is addressed in detail under in Section 4.3.5, Impacts Analysis. The second criterion is if the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase, as discussed further in Section 4.3.5.

To evaluate the potential for the project to result in a cumulatively considerable net increase of any criteria pollutant this analysis applies the SCAQMD's construction and operational criteria pollutants mass daily thresholds, as shown in Table 4.3-4. A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would

exceed the SCAQMD VOC or NO_x thresholds shown in Table 4.3-4. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly (see the discussion of O_3 and its sources in Section 4.3.1.2, Pollutants and Effects), and the effects of emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods for projects of the size of the proposed Project.

The assessment of the project's potential to expose sensitive receptors to substantial pollutant concentrations includes a localized significance threshold (LST) analysis, as recommended by the SCAQMD, to evaluate the potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the project from construction. For project sites of 5 acres or less, the SCAQMD LST Methodology (2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing project-specific dispersion modeling. Although the proposed development area of the site is greater than 5 acres (estimated to be 18 acres, which has been conservatively assumed as this disturbance would occur within 17.30 acres), the project would disturb less than 5 acres in one day, as discussed in detail in the following text, so it is appropriate to use the lookup tables for the LST evaluation.

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

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

The project site is located in SRA 9 (East San Gabriel Valley). The SCAQMD provides guidance for applying the California Emissions Estimator Model (CalEEMod) to the LSTs. LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. Although the total disturbed acreage would be 17.30 acres over approximately 12 days, less than 2 acres will be disturbed during any construction phase; thus, project emissions are conservatively compared to the SCAQMD 1-acre thresholds.

The nearest sensitive-receptor land use (a residence) is located adjacent to the western and southern boundary of the project site. As such, the LST receptor distance was assumed to be 82 feet (25 meters), which is the shortest distance provided by the SCAQMD lookup tables. The LST values from the SCAQMD lookup tables for SRA 9 (East San Gabriel Valley) for a 1-acre project site and a receptor distance of 25 meters are shown in Table 4.3-5.

Table 4.3-5. Construction Localized Significance Thresholds for Source Receptor Area 9 (East San Gabriel Valley)

Pollutant	Threshold (pounds per day)
Construction	
NO_2	89
CO	623

Table 4.3-5. Construction Localized Significance Thresholds for Source Receptor Area 9 (East San Gabriel Valley)

Pollutant	Threshold (pounds per day)
Construction	
PM_{10}	5
$PM_{2.5}$	3

Source: SCAQMD 2009.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Localized significance thresholds (LSTs) were determined based on the values for an interpolated 1-acre site at a distance of 25 meters from the nearest sensitive receptor.

The construction HRA methodology and assumptions are presented in Section 4.3.3.1.3, Construction Health Risk Assessment. The construction HRA applies the SCAQMD risk thresholds presented in Table 4.3-4, which are a maximum incremental cancer risk greater than or equal to 10 in 1 million and a chronic hazard index greater than or equal to 1.0 (project increment). The CO hotspot assessment and construction HRA are evaluated under the potential for the project to expose sensitive receptors to substantial pollutant concentrations (Section 4.3.5), along with the LST analysis.

The potential for the project to result in other emissions, specifically an odor impact (Section 4.3.5) is based on the project's land use type and anticipated construction activity, and the potential for the project to create an odor nuisance pursuant to SCAQMD Rule 402.

4.3.3.1 Approach and Methodology

4.3.3.1.1 Construction Emissions

Emissions from the construction phase of the project were estimated using CalEEMod Version 2016.3.2. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project applicant and CalEEMod default values when project specifics were not known. Other assumptions made for the purposes of modeling, including construction equipment mix and vehicle trips used for estimating the project-generated construction emissions, are included in Appendix B. The project would implement dust control strategies as a project design feature in compliance with SCAQMD Rule 403. To reflect implementation of proposed dust control strategies in compliance with SCAQMD Rule 403, the following was assumed in CalEEMod:

- Water exposed area two times per day (55% reduction in PM_{10} and $PM_{2.5}$).
- Limit vehicle travel on unpaved roads to 15 miles per hour.

4.3.3.1.2 Operational Emissions

Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2026 was assumed consistent with completion of project construction. CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment; energy sources, including include emissions associated with building electricity and natural gas usage (non-hearth); and mobile sources, primarily associated with motor vehicles (automobiles, light-duty trucks, and heavy-duty delivery trucks) traveling to and from the project site. Assumptions made for the purposes of modeling operational emissions, are included in Appendix B.

4.3.3.1.3 Construction Health Risk Assessment

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

4.3.4 Project Design Features

There are no project design features that apply to air quality.

4.3.5 Impacts Analysis

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

As previously discussed, the project site is located within the SCAB under the jurisdiction of the SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. The SCAQMD has established criteria for determining consistency with the AQMP, currently the 2016 AQMP, in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2:** The proposed project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1

As discussed in the following section, the project would not exceed the SCAQMD significance thresholds for any criteria air pollutants. Therefore, the project would not result in an increase in the frequency or severity of existing air quality violations. Therefore, the project would not conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2

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

The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the SCAG for its RTP/SCS (SCAG 2016), which is based on general

plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).[5] The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans. The project site currently has a zoning and land use designation of Institutional Land (City of Sierra Madre 2015, 2017). The General Plan and Zoning Code amendments would primarily change this land use designation to Specific Plan to allow for low-density residential and open space uses on the project site. The approval of the Specific Plan would provide zoning and development standards that allow for greater gross floor area, lot coverage, reduced parking requirements and setback standards for the new residential development parcels. As such, the project would not be consistent with the existing zoning and general plan.

It was determined the proposed project would generate a residential population of 95 persons and 42 residences. According to SCAG's 2016 RTP/SCS, the City is expected to have a population of 11,000 in 2012 and 11,200 in 2040. The number of households is anticipated to grow by 200 between 2012 and 2040. Therefore, the project would not exceed the projected growth assumed for the City for residential population. The City's Regional Housing Needs Allocation (RHNA) 2013–2021 allocation from SCAG showed that the allocation was 55 and the City still needed 18 units (City of Sierra Madre 2021). For the RHNA for 2021–2029 the allocation from SCAG is 204 units (SCAG 2021). As the project would bring 42 units to the City in 2026 it would be within the current RHNA allocation and help meet the City's backlog of 18 units from the previous allocation. Therefore, the project would be within the projected growth of the City's RHNA as defined by SCAG.

As the proposed project would not contribute to local population and household growth and associated VMT that is not already anticipated for the project Site in the existing General Plan, the proposed project is accounted for in the SIP and RAQS, and the proposed project would be consistent with local air quality plans. Therefore, the impact is considered less than significant.

Summary

As described previously, the project would not result in an increase in the frequency and severity of existing air quality violations and would not conflict with Consistency Criterion No. 1. The project would be consistent with the General Plan and growth projections of the RTP/SCS. Therefore, impacts related to the project's potential to conflict with or obstruct implementation of the applicable air quality plan would be **less than significant**.

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?*

Construction Emissions

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather

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

conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

As discussed in Section 4.3.3.1.1, Construction Emissions, criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2024 through 2025). Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the project applicant and is intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available.

Implementation of the project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would implement various dust control strategies and would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Proposed construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites and unpaved roads two times per day depending on weather conditions and restricting vehicle speed on unpaved roads to 15 miles per hour. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 4.3-6 presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix B.

Table 4.3-6. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2024	8.22	86.46	59.87	0.18	63.45	8.46
2025	54.63	19.01	25.32	0.06	41.90	5.10
Maximum Daily Emissions	**54.63**	**86.46**	**59.87**	**0.18**	**63.45**	**8.46**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix B for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which accounts for implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads two times per day, and restricting vehicle speed on unpaved roads to 15 miles per hour.

As shown in Table 4.3-6, maximum daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction. Impacts would be less than significant.

Operational Emissions

Operation of the proposed project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources (vehicle trips), area sources (consumer products, landscape maintenance equipment), and energy sources. As discussed in Section 4.3.3.1.2, Operational Emissions, pollutant emissions associated with long-term operations were quantified using CalEEMod. Project-generated mobile source emissions were estimated in CalEEMod based on project-specific trip rates. CalEEMod default values were used to estimate emissions from the proposed project area and energy sources.

Table 4.3-7 presents the maximum daily area, energy, and mobile source emissions associated with operation (year 2026) of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix B.

Table 4.3-7. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions - Unmitigated

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Area	14.62	0.91	24.84	0.05	3.23	3.23
Energy	0.03	0.29	0.12	0.00	0.02	0.02
Mobile	0.55	2.61	7.27	0.03	2.93	0.80
Total	**15.20**	**3.81**	**32.23**	**0.08**	**6.18**	**4.05**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; PDF = project design feature.
See Appendix B for complete results.
Totals may not sum due to rounding.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output and operational year 2026, which accounts for compliance with SCAQMD Rule 1113 (Architectural Coatings).

As shown in Table 4.3-7, the combined daily area, energy, and mobile source emissions would not exceed the SCAQMD operational thresholds for NO_x, VOC, CO, SO_x, PM_{10}, and $PM_{2.5}$.

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

In considering cumulative impacts from the project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. The basis for analyzing the project's cumulatively considerable contribution is if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and consistency with the SCAQMD 2016 AQMP, which addresses the cumulative emissions in the SCAB.

As discussed in Section 4.3.1.4.1, South Coast Air Basin Attainment Designation, the SCAB has been designated as a national nonattainment area for O_3 and $PM_{2.5}$ and a California nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The

nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 4.3-8 and 4.3-9, project-generated construction and operational emissions would not exceed the SCAQMD emission-based significance thresholds for all criteria air pollutants.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative. However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed SCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

Based on the project-generated construction emissions, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Impacts would be **less than significant**.

3. Would the project expose sensitive receptors to substantial pollutant concentrations?

Localized Significance Thresholds Analysis

As discussed in Section 4.3.1.3, sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The closest off-site sensitive receptors to the project site include residences adjacent to the southern and western project site boundary.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. As indicated in Section 4.3.3, Thresholds of Significance, the SCAQMD also recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ impacts as a result of construction activities to sensitive receptors in the immediate vicinity of the project site. The impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (2009). According to the Final Localized Significance Threshold Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Hauling of soils and construction materials associated with the project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Localized emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. As discussed above, off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for SRA 9 are presented in Table 4.3-8 and compared to the maximum daily on-site construction emissions generated during the project.

Table 4.3-8. Localized Significance Thresholds Analysis for Project Construction - Unmitigated

Maximum On-Site Emissions	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Construction Emissions	80.52	56.77	7.42	4.12
SCAQMD LST	*89*	*623*	*5*	*3*
LST Exceeded?	No	No	Yes	Yes

Source: SCAQMD 2009.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix B for complete results.
Localized significance thresholds are shown for a 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters.
These estimates implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads twice times per day, and restricting vehicle speed on unpaved roads to 15 miles per hour.

As shown in Table 4.3-8, construction activities would generate emissions in excess of site-specific LSTs for PM_{10} and $PM_{2.5}$; therefore, localized construction impacts during construction of the project would be **potentially significant (Impact AQ-1)** and mitigation is required.

Valley Fever

As discussed in Section 4.3.1.2.2, Non-Criteria Air Pollutants, valley fever is not highly endemic to the County, and within the County, the incidence rate in the project site is below the County average and the statewide average. Construction of the project would comply with SCAQMD Rule 403 (Fugitive Dust), which requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. In addition, the project would implement various dust control strategies. The nearest sensitive-receptor land use (existing residence) is located adjacent to the southern and western project boundary. Based on the low incidence rate of coccidioidomycosis on the project site and in the County, and with the project's implementation of dust control strategies, it is not anticipated that earth-moving activities during project construction would result in exposure of nearby sensitive receptors to valley fever. Therefore, the project would have a **less than significant** impact with respect to valley fever exposure for sensitive receptors.

Health Impacts of Carbon Monoxide

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

The project would have trip generation associated with construction worker vehicles and vendor trucks. Title 40 of the California Code of Regulations, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and PM_2 Concentrations (hot-spot analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site which is affected by

construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site" (40 CFR 93.123). While Project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 16 months and would not require a project-level construction hotspot analysis.

The Office of Planning and Research (OPR) and the Natural Resources Agency have issued new CEQA Guidelines for analyzing transportation impacts. By July 1, 2020, all CEQA lead agencies must analyze a project's transportation impacts using vehicle miles traveled (VMT). VMT measures the distances vehicles will travel to and from a project, rather than congestion levels at intersections (level of service or "LOS," graded on a scale of A–F). To account for this shift from LOS to VMT, and evaluate the potential for CO hotspots for the project, analysis performed by South Coast Air Quality Management District SCAQMD is leveraged as follow.

The SCAQMD conducted CO modeling for the 2003 AQMP (see Appendix V: Modeling and Attainment Demonstrations, SCAQMD 2003 of Appendix B) for the four worst-case intersections in the SCAB: (1) Wilshire Boulevard and Veteran Avenue, (2) Sunset Boulevard and Highland Avenue, (3) La Cienega Boulevard and Century Boulevard, and (4) Long Beach Boulevard and Imperial Highway. At the time the 2003 AQMP was prepared, the intersection of Wilshire Boulevard and Veteran Avenue was the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. Using CO emission factors for 2002, the peak modeled CO 1-hour concentration was estimated to be 4.6 ppm at the intersection of Wilshire Boulevard and Veteran Avenue.

For the proposed project the daily traffic volume of 100,000 vehicles would be conservative compared to the traffic volumes of nearby intersections. For comparison, the intersection with the highest hourly volume including the project would be at Michillinda Avenue and Foothill Boulevard with 2,960 in the PM (Appendix B). When added to the maximum 1-hour CO concentration from 2017 through 2019 at the Pasadena monitoring station (see Table 4.3-2, Local Ambient Air Quality Data) which was 2.2 ppm in 2017, the 1-hour CO would be 6.8 ppm, while the CAAQS is 20 ppm.

The 2003 AQMP also projected 8-hour CO concentrations at these four intersections for 1997 and from 2002 through 2005. From years 2002 through 2005, the maximum 8-hour CO hotspot was 3.8 ppm at the Sunset Boulevard and Highland Avenue intersection (SCAQMD 2002) (3.4 ppm at the Wilshire Boulevard and Veteran Avenue in 2002). Adding the 3.8 ppm to the maximum 8-hour CO concentration from 2017 through 2019 at the Pasadena monitoring station (see Table 4.3-2) which was 1.7 ppm in 2017, the 8-hour CO would be 5.5 ppm, while the CAAQS is 9.0 ppm.

Therefore, it is concluded that a quantitative CO hotspots analysis is not required. The construction-related traffic is not anticipated to create a CO hotspot as emissions would be dispersed rapidly and would not be concentrated. During operation, the project is not expected to generate a CO hotspots.

As such, impacts to sensitive receptors with regard to potential CO hotspots resulting from the project's contribution to cumulative traffic-related air quality impacts would be **less than significant**.

Health Impacts of Toxic Air Contaminants

Construction Health Risk

As discussed in Section 4.3.3.1.3, Construction Health Risk Assessment, a construction HRA was performed to estimate the Maximum Individual Cancer Risk and the Chronic Hazard Index for residential receptors as a result of project construction. Results of the construction HRA are presented in Table 4.3-9.

Table 4.3-9. Construction Health Risk Assessment Results – Unmitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk – Residential[1]	Per Million	36.7	10	**Potentially Significant**
Chronic Hazard Index – Residential[1]	Index Value	0.03	1.0	Less than Significant

Source: SCAQMD 2019.
Note: CEQA = California Environmental Quality Act.
See Appendix B.
[1] The maximally exposed individual resident for annual cancer and chronic health risk impacts is located north of the project site at UTM coordinates 401768.88 meter Easting (m E)/ 3781728.78 meters Northing (m N).

As shown in Table 4.3-9, project construction activities would result in a Residential Maximum Individual Cancer Risk of 36.7 in 1 million, which is greater than the significance threshold of 10 in 1 million. Project construction would result in a Residential Chronic Hazard Index of 0.004, which is below the 1.0 significance threshold. The project construction TAC health risk impacts would be **potentially significant (Impact AQ-2)** and mitigation is required.

Health Effects of Other Criteria Air Pollutants

Project construction and operation would not exceed SCAQMD thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. VOCs and NO_x are precursors to O_3, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 CAAQS/NAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Because operation of the project would not exceed SCAQMD threshold for NO_x or VOC, implementation of the project could minimally contribute to regional O_3 concentrations and the associated health effects.

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

CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots were discussed previously and are determined to be a less-than-significant impact. Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant.

Construction and operation of the project would exceed localized thresholds for PM_{10} or $PM_{2.5}$ and may contribute to exceedances of the NAAQS and CAAQS for particulate matter or may obstruct the SCAB from coming into attainment for these pollutants. However, the project would not result in substantial DPM emissions during construction and operation, and therefore, would not result in significant health effects related to DPM exposure. Additionally, the project would implement dust control strategies and be required to comply with SCAQMD Rule 403,

which limits the amount of fugitive dust generated during construction. Therefore, the project may result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, because construction of the proposed project would exceed the SCAQMD localized significance thresholds for PM_{10} and $PM_{2.5}$, the potential health effects associated with criteria air pollutants are considered **potentially significant (Impact AQ-1)** and mitigation is required.

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

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

Construction

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be **less than significant**.

Operations

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). The project would not include land uses that generate odors as discussed above during operation. Therefore, project operations would result in an odor impact that is **less than significant**.

4.3.6 Mitigation Measures

The following mitigation measure is required to reduce emissions of PM_{10} and $PM_{2.5}$ (**Impact AQ-1**) and DPM **(Impact AQ-2)** during construction.

MM-AQ-1 Prior to the City's issuance of the demolition and grading permits for the Project, the Applicant shall demonstrate to the satisfaction of the Planning Division that its construction contractor will use a construction fleet wherein all 50-horsepower or greater diesel-powered equipment is powered with California Air Resources Board (CARB)-certified Tier 4 Interim engines or equipment outfitted with CARB verified diesel particulate filters.

An exemption from this requirement may be granted if: (1) the Applicant documents equipment with Tier 4 Interim engines are not reasonably available, and (2) functionally equivalent diesel PM emission totals can be achieved for the project from other combinations of construction equipment (Tier 3 with level 3 diesel particulate filter, electric, compressed natural gas, hydrogen, etc.). For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded to a Tier 4 Final or replaced with an alternative-fueled (not diesel-fueled)

equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards. Before an exemption may be granted, the Applicant's construction contractor shall: (1) demonstrate that at least two construction fleet owners/operators in Los Angeles County were contacted and that those owners/operators confirmed Tier 4 Interim equipment could not be located within Los Angeles County during the desired construction schedule; and (2) the proposed replacement equipment has been evaluated using the California Emissions Estimator Model (CalEEMod) or other industry standard emission estimation method, and documentation provided to the Planning Division confirms that necessary project-generated functional equivalencies in the diesel PM emissions level are achieved.

4.3.7 Level of Significance After Mitigation

Localized Significance Thresholds Analysis

Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. As discussed above, off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for SRA 9 are presented in Table 4.3-10 and include mitigation measure **MM-AQ-1** and compared to the maximum daily on-site construction emissions generated during the project.

Table 4.3-10. Localized Significance Thresholds Analysis for Project Construction - Mitigated

Maximum On-Site Emissions	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Construction Emissions	40.12	80.87	4.46	1.42
SCAQMD LST	*89*	*623*	*5*	*3*
LST Exceeded?	**No**	**No**	**No**	**No**

Source: SCAQMD 2009.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix B for complete results.
Localized significance thresholds are shown for a 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters.
These estimates implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads twice times per day, and restricting vehicle speed on unpaved roads to 15 miles per hour.

As shown in Table 4.3-10, mitigated construction activities would not generate emissions in excess of site-specific LSTs; therefore, localized construction impacts during construction of the project (**Impact AQ-1**) would be **less than significant** with mitigation.

Health Impacts of Toxic Air Contaminants

Construction Health Risk

As discussed in Section 4.3.3.1.3, Construction Health Risk Assessment, a construction HRA was performed to estimate the Maximum Individual Cancer Risk and the Chronic Hazard Index for residential receptors as a result of project construction. Results of the construction HRA including mitigation measure **MM-AQ-1** are presented in Table 4.3-11.

Table 4.3-11. Construction Health Risk Assessment Results – Mitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk – Residential[1]	Per Million	4.3	10	Less than Significant
Chronic Hazard Index – Residential[1]	Index Value	0.004	1.0	Less than Significant

Source: SCAQMD 2019.
Note: CEQA = California Environmental Quality Act.
See Appendix B.
[1] The maximally exposed individual resident for annual cancer and chronic health risk impacts is located north of the project site at UTM coordinates 401768.88 meter Easting (m E)/ 3781728.78 meters Northing (m N).

As shown in Table 4.3-11, mitigated project construction activities would result in a Residential Maximum Individual Cancer Risk of 4.3 in 1 million, which is less than the significance threshold of 10 in 1 million. Project construction would result in a Residential Chronic Hazard Index of 0.004, which is below the 1.0 significance threshold. The project construction TAC health risk impacts (**Impact AQ-2**) would be **less than significant** with mitigation.

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4.4 Biological Resources

This section describes the existing biological resources conditions of The Meadows Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. This analysis is based on a review of the Sensitive Resources Analysis for the Project Located at 700 North Sunnyside Avenue, Sierra Madre Memorandum (Sensitive Resources Analysis) prepared by Dudek in June 2020 (Appendix C1) and the Protected Tree Report prepared by Dudek in November 2020 (Appendix C2).

4.4.1 Existing Conditions

Project Site

The project site is located within the northwestern portion of the City of Sierra Madre (City). As described in Chapter 2, Environmental Setting, of this Draft Environmental Impact Report (EIR), the project site is located to the south of the Mater Dolorosa Retreat Center and is bound by single-family residential areas to the west and south, a large retention basin and Bailey Canyon Wilderness Park to the east, and the foothills of the San Gabriel Mountains to the north. The project site is located on the same parcel as the Mater Dolorosa Retreat Center, which is connected to the site by an access road; however, a lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two southern lots that make up the project site as one and adjust the northern boundary of this new lot further to the north.

The City's General Plan defines the city as a Wildlife Sanctuary, citing presence of various wildlife species within the City limits. However, with human development over time, wildlife species and suitable habitat have been displaced, making the City an urban/wildlife interface (City of Sierra Madre 2015).

Under existing conditions, the project site is vacant and appears to be mowed and composed of almost entirely non-native grasslands and herbaceous annuals. As previously mentioned, one private access road runs through the western portion of the project site in addition to another road which creates the project site's eastern boundary.

Special-Status Species

No federal or state-listed plant or wildlife species are expected to occur in the project site. The project site does not support any native vegetation communities and the area appears to be regularly maintained, which limits the potential for many native plant and wildlife species (Appendix C1). A collection of the wildlife species observed on the project site is included within Appendix C1. The biological study area included 101 inventoried trees that could provide nesting habitat for birds. These trees could also be used by raptors for foraging in the area; however, common prey for raptors, including California ground squirrel (*Otospermophilus beecheyi*) and desert cottontail (*Sylvilagus audubonii*) were not observed or not abundant enough to provide a unique resource for raptors.

Sensitive Natural Communities and Riparian Habitats

Figure 4.4-1, Vegetation and Land Cover Map, illustrates the project site's vegetation and land cover consists of ornamental vegetation lining paved roadways and non-native grassland. The project site consists of maintained areas of ornamental, non-native grassland and paved roadways. The non-native grasslands are mowed and

composed of almost entirely non-native grasses and herbaceous annuals (Appendix C1). No sensitive communities or riparian habitat occur on the project site.

Wetlands and Other Jurisdictional Waters

No wetlands or other jurisdictional waters are observed on the project site. Additionally, no wetland or riparian features have been previously identified (Appendix C1). The project site is adjacent to wetlands and riparian features across the roadways which separates the project site from Bailey Canyon Wilderness Park (USFWS 2020).

Wildlife Corridors and Native Wildlife Nursery Sites

The project site is adjacent to the San Gabriel Mountains, which is a large undeveloped area that supports large terrestrial wildlife capable of movement over large distances. However, the project site is surrounded by residential development to the west and south, the Bailey Canyon Debris Basin to the east, and the Mater Dolorosa Retreat Center to the north. Some wildlife may have localized movement within and through the project site. Although mule deer (*Odocoileus hemionus*) were observed grazing within the project site and within the adjacent Mater Dolorosa Retreat Center, and, it is expected that the mule deer would also use the foothills to the north of the Mater Dolorosa Retreat Center (Appendix C1); however there is no wildlife corridor connection to other large undeveloped areas. In addition, the project has vegetation that could provide nesting habitat for birds protected under the Migratory Bird Treaty Act (16 USC Sections 703–712) and California Fish and Game Code Sections 3503, 3503.5, and 3513.

Locally Protected Trees

The biological study area contained 101 inventoried trees, 10 of which were coast live oak (*Quercus agrifolia*). All 10 of the oak trees meet the City's criteria for a protected oak tree. Appendix B presents the location of the individual trees mapped and assessed for the proposed project. Overall, the trees exhibit growth and structural conditions that are typical of their location in an undeveloped urban landscape. The trees include various trunk and branch maladies and health and structural conditions. As presented in Appendix A, 29% of the individually mapped trees (29 trees) exhibit good health; 48% (48 trees) are in fair health; and 24% (24 trees) are in poor health. Structurally, 6% (6 trees) of the individually mapped trees are considered to exhibit good structure, and 77% (77 trees) exhibit fair structure; and 18% (18 trees) have poor structure. The trees in good condition exhibit acceptable vigor, healthy foliage, and adequate structure, and lack any major maladies. Trees in fair condition are typical, with few maladies but declining vigor. Trees in poor condition exhibit declining vigor, unhealthy foliage, poor branch structure, and excessive lean. No pests or pathogens were observed on site.

Trees within the biological study area vary in size and stature according to species and available growing space. The site's trees are composed of single- and multi-stemmed trees, with single-stemmed trunk diameters that range from 2 to 44 inches, and multi-stemmed trunk diameters that range from 4 to 76 inches. Tree heights vary from 8 to 55 feet. Tree canopy extents range from 5 feet to approximately 70 feet.

4.4.2 Relevant Plans, Policies, and Ordinances

Federal

Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 (16 USC Section 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS) for most plant and animal species and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA) for certain marine species. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing the extinction of plants and wildlife. 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 FESA, it is unlawful to "take" any listed species, and take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

FESA allows for the approval of impacts to listed species under Section 7, through the issuance of a biological opinion which is prepared by the either the USFWS or NOAA in connection with projects that also require other federal agency permits or other approvals, and issuance of incidental take permits for listed species under Section 10, which authorizes impacts to listed species pursuant to the approval of Habitat Conservation Plans on private property without any other federal agency involvement.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The primary motivation for the international negotiations was to stop the "indiscriminate slaughter" of migratory birds by market hunters and others. The MBTA protects over 800 species of birds (including their parts, eggs, and nests) from killing, hunting, pursuing, capturing, selling, and shipping unless expressly authorized or permitted.

Section 404 of the Clean Water Act

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. The USACE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function.

On January 23, 2020, the USACE and Environmental Protection Agency (EPA) finalized the "Navigable Waters Protection Rule," which establishes a new definition of "Waters of the U.S." under the CWA. The new Navigable Waters Protection Rule (Rule) repeals the Obama-era 2015 Clean Water Rule and replaces it with a definition that drastically limits the scope of federal regulation to a much narrower collection of aquatic resource features. Among the greatest changes, the Rule eliminates "significant nexus" determinations to determine if potential tributaries have a significant effect on the "chemical, physical, and biological integrity of downstream traditional navigable waters." The Rule also redefines the term "adjacent." In order for an adjacent wetland to be jurisdictional, it must touch "at least one point or side of a jurisdictional water" or have a direct hydrological surface connection to a

traditional navigable waterway. Hydrological connections through groundwater, which have been suggested to maintain federal jurisdiction in the past, are now outside of the scope of federal purview. Most importantly, the Rule identifies four specific categories of aquatic resource features that will be regulated by the federal government under the CWA, leaving oversight for other "excluded" waterbodies to states and tribes. The four specific categories of aquatic resources regulated under the CWA are:

1. Territorial seas and traditional navigable waters
2. Perennial and intermittent tributaries
3. Certain lakes, ponds, and impoundments
4. Wetlands that are adjacent to jurisdictional waters

The revised Rule does not expand federal regulation to include new categories of aquatic features; however, it does provide a list of excluded features that would no longer be considered Waters of the U.S. under the final Rule. Most significantly, "ephemeral" streams and other features that only flow in direct response to precipitation, and are particularly prevalent in the western United States, would no longer be subject to CWA regulation. The revised Rule redefining Waters of the U.S. goes into effect within 60 days of its publication in the Federal Register, the date of which has not yet been determined.

Section 401 of the Clean Water Act

The State Water Resources Control Board acting through the Regional Water Quality Control Boards (RWQCBs), has authority over wetlands through Section 401 of the CWA. The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. The Los Angeles RWQCB has authority for Section 401 compliance in the project area. A request for certification is submitted to the regional board at the same time that an application is filed with the USACE.

State

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) provides protection and prohibits the take of plant, fish, and wildlife species listed by the State of California. Unlike FESA, state-listed plants have the same degree of protection as wildlife, but insects and other invertebrates may not be listed. Take is defined similarly to FESA and is prohibited for both listed and candidate species. Take authorization may be obtained by the project applicant from the California Department of Fish and Wildlife (CDFW) under CESA Section 2081, which allows take of a listed species for educational, scientific, or management purposes. In this case, private developers consult with CDFW to develop a set of measures and standards for managing the listed species, including full mitigation for impacts, funding of implementation, and monitoring of mitigation measures.

California Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. CDFW cannot issue permits or licenses that authorize the take of any fully

protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock. Furthermore, it is the responsibility of the CDFW to maintain viable populations of all native species. Toward that end, the CDFW has designated certain vertebrate species as California Species of Special Concern (SSC), because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 directed the CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. The CESA expanded on the original Native Plant Protection Act and enhanced legal protection for plants, but the Native Plant Protection Act remains part of the California Fish and Game Code. To align with federal regulations, the CESA created the categories of "threatened" and "endangered" species. It converted all rare animals into the act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Because rare plants are not included in the CESA, mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires identification of a project's potentially significant impacts on biological resources and ways that such impacts can be avoided, minimized, or mitigated. The act also provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts.

CEQA Guidelines Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors." A rare animal or plant is defined in Section 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c).

CDFW has developed a list of "Special Species" as "a general term that refers to all of the taxa the CNDDB [California Natural Diversity Database] is interested in tracking, regardless of their legal or protection status." This is a broader list than those species that are protected under the FESA, CESA, and other California Fish and Game Code provisions, and includes lists developed by other organizations, including for example the Audubon Watch List Species. Guidance documents prepared by other agencies, including the U.S. Fish and Wildlife Service Birds of Special Concern, are also included on this CDFW Special Species list. Additionally, CDFW has concluded that plant species included on the California Native Plant Society's California Rare Plant Rank List 1 and 2, and potentially some List 3 plants, are covered by CEQA Guidelines Section 15380.

Section IV, Appendix G (Environmental Checklist Form), of the CEQA Guidelines requires an evaluation of impacts to "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 the U.S. Fish and Wildlife Service."

California Fish and Game Code Section 1602

Under these sections of the California Fish and Game Code, the project proponent or applicant is required to notify CDFW prior to any activity that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

Porter-Cologne Water Quality Control Act

Pursuant to provisions of the Porter-Cologne Act, the RWQCB regulates discharging waste, or proposing to discharge waste, within any region that could affect a water of the state (California Water Code, Section 13260[a]). The State Water Resources Control Board defines a waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]).

As of April 2019, the State Water Resources Control Board has narrowed their definition of a waters of the state to include the following:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state,
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes: industrial or municipal wastewater treatment or disposal; settling of sediment; detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial permitting program; treatment of surface waters; agricultural crop irrigation or stock watering; fire suppression; industrial processing or cooling water; active surface mining – even if the site is managed for interim wetlands functions and values; log storage; treatment, storage, or distribution of recycled water; maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or fields flooded for rice growing.

All waters of the United States are waters of the state. Wetlands, such as isolated seasonal wetlands, that are not generally considered waters of the United States are considered waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface

water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." (SWRCB 2019).

Local

City of Sierra Madre Tree Preservation and Protection Ordinance

The City of Sierra Madre Tree Preservation and Protection Ordinance (Tree Preservation and Protection Ordinance) protects California scrub oak (*Quercus berberidifolia*), coast live oak (*Quercus agrifolia*), coastal scrub oak (*Quercus dumosa*), Engelmann oak (*Quercus engelmannii*), Southern California black walnut (*Juglans californica*), and western sycamore (*Platanus racemosa*). The Protected Tree Report (Appendix C2) identified 101 trees within the project site, including ten coast live oak (*Quercus agrifolia*), and includes mitigation measures to comply with the City ordinance.

Habitat Conservation Plan, Natural Community Conservation Plan, or Other Conservation Plans

The project site is not located within any habitat conservation plan, natural community conservation plan, or other conservation plans (Appendix C1).

City of Sierra Madre General Plan

The General Plan is the primary planning document for the incorporated areas of the City. The General Plan outlines goals and policies that are intended to guide new planning and development efforts within the City in compliance with State requirements. The City's General Plan is divided into chapters which correlate with required elements mandated by the State. Chapter 2, Resource Management, contains goals and policies that are applicable to the potential biological resources impacts of the project. Section 2, Co-Existence with Wildlife; Section 3, Tree Preservation; and Section 5, Water Resources are sections within the General Plan which manage development's impact on natural resources (City of Sierra Madre 2015).

As the City develops, wildlife species and suitable habitat is displaced into surrounding areas. This results in the City as an urban/wildlife interface. According to the General Plan, the City adopted Resolution 72-62 in 1972, designating Sierra Madre as a Wildlife Sanctuary. "The city, its officers and employees and the residents of the city of Sierra Madre are hereby encouraged to protect the birds, wildlife, natural habitats, food sources and other wildlife resources located within the city limits." In 2000, the City adopted Ordinances 1177 and 1197 into the Municipal Code Development Standards, Section 17.48.130.H ("Prohibited Fencing. Spiked fencing shall be prohibited in all zones") (City of Sierra Madre 2015).

The General Plan includes the following goals, objectives, and policies relevant to the proposed project with regard to biological resources, which are listed below (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Chapter 1, Land Use

Goal 8: Preserve existing and provide additional constructed and natural open space.

Objective L4: Mitigating the impacts of new development on the City's open space, trees, infrastructure, water, transit services, the character of existing development, and other public needs.

Chapter 2, Section 2: Tree Preservation

Goal 1. Continued preservation and protection of existing trees.

Goal 2. Increase of the City's community forest.

Objective R10: Maintaining and enhancing the City's significant tree resources.

Policy R10.2: Continue to develop tree preservation and protection measures.

Policy R10.8: Continue to monitor construction projects with regard to grading and construction effects on trees, tree removal and replacement.

City of Sierra Madre Municipal Code

The Sierra Madre Municipal Code contains existing standards and regulations that help mitigate potential impacts on biological resources. The following is a description of the provisions of the Sierra Madre Municipal Code that are applicable to the proposed project.

Chapter 12.20 (Tree Preservation)

Trees subject to City permit requirements include those defined by Title 12.20.020, as follows:

- "Protected tree" means any Southern California Black Walnut (*Juglans californica*), Engelmann Oak (*Quercus engelmannii*), Coast Live Oak (*Quercus agrifolia*), or Western Sycamore (*Platanus racemosa*) tree whose trunk (or collective trunks) exceed a diameter of four inches measured four feet above natural ground level.

The City adopted the ordinance to, "contribute to a better public understanding of the value of the city's trees and to prohibit indiscriminate damage and destruction of this significant resource." Under the City Ordinance:

A. It is unlawful for any person, firm or corporation to either "remove" (as defined herein) or "substantially trim" (as that term is defined herein), without a permit from the city having been issued therefor:
   a. Any "street tree" (as defined herein); or,
   b. Any "protected tree" (as defined herein) in connection with an application for a subdivision, a parcel map, or a lot line adjustment, or a development project (or proposed development project) to construct any pad, parking lot, grading, or other construction exempt from the city's environmental regulations;
   c. Any "protected tree" (as defined herein) on any "undeveloped property" (as that term is defined herein).
B. It is unlawful for any person, firm or corporation, to accept payment for removal or trimming of any tree within the city unless that person, firm or corporation is in possession of a valid business license from the city and a valid C27 or C61/D49 State Contractor's Licenses, liability and workers compensation insurance policies.

Chapter 17.52 (Hillside Management Zone)

Section 17.52.180 (Biotic Resources Management Plan) of this chapter requires the preparation of a Biotic Resources Management Plan for an Application for Land Division in the Hillside Management zone. A Biotic Resources Management Plan is required to contain an assessment of existing flora and fauna on and near the site;

an assessment of project impacts to biological resources; mitigation measures including no net loss of wetlands and other sensitive habitats; and identify regulatory permits needed for project approval.

Community Forest Management Plan

The Community Forest Management Plan ensures the continuation and enhancement of the tree canopy for the beauty, wellbeing, livability, and long-term environmental health of the community of Sierra Madre. The City of Sierra Madre's mission to grow and perpetuate the community forest is embodied in the Community Forest Master Plan. This mission is expressed through these overarching goals (City of Sierra Madre 2014):

- Conserve and expand tree canopy cover equal to no net loss, with a gradual increase over time.
- Foster increased public awareness and education regarding the environmental value of trees as green infrastructure.
- Promote increased shade-tree canopy for energy conservation, storm water capture, and improved air quality.
- Encourage species selection appropriate for local environmental conditions and sustainability
- Preserve and enhance community aesthetics and property values through increased canopy cover and diversity
- Apply best management practices for planting, maintaining, and responding to changed environmental conditions in the community forest

4.4.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to biological resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to biological resources would occur if the project would:

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.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
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.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.4.4 Project Design Features

There are no project design features that apply to biological resources.

4.4.5 Impacts Analysis

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?***

Special-Status Species

The Sensitive Resources Analysis prepared for the proposed project (Appendix C1) included a literature review, a field visit, and a special-status species habitat assessment for endangered, rare, or threatened plant and wildlife species (also referred to as "special-status" species). A review of existing information and a field visit was conducted to determine the sensitive biological resources that are present or have potential to occur on and adjacent to the project site. As described in Appendix C1, the literature review conducted prior to the field visit utilized the CDFW CNDDB, the California Native Plant Society's Online Inventory of Rare and Endangered Vascular Plants, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation, the USFWS Wetland Mapper online viewer, the Consortium of California Herbaria, iNaturalist, and eBird.

The evaluation of each special-status plant and wildlife species' potential to occur within the construction site was based on an analysis of elevation, soils, vegetation communities, and level of disturbance of the site in conjunction with the known distribution of special-status species in the vicinity of the project site (Appendix C1).

Special-Status Plant Species

Endangered, rare, or threatened plant species, as defined in Section 15380(b) of the CEQA Guidelines (14 CCR Section 15000 et seq.), are referred to as "special-status plant species", and include endangered or threatened plant species recognized in the context of the California Endangered Species Act (CESA) and federal Endangered Species Act (FESA) and plant species with a California Rare Plant Rank 1 through 2 (Appendix C1).

There are 41 special-status plant species with recorded occurrences in the project site. Four species are listed under the federal and/or California endangered species acts. However, these special-status plant species are either not expected to occur, or have a low potential to occur. The project site lacks suitable habitat and are outside of various species' known elevation range. In addition, the field visit did not record the presence of these species on the project site. Special-status plant species which had a low potential of occurrence were recorded as such due to marginal grassland found on site consisting of non-native and ruderal species. Furthermore, the project site is not within any designated critical habitat (Appendix C1). Lastly, the project site appears to be regularly maintained, which limits the potential for many native plant species. As such, the project site does not support any special-status plant species. Therefore, impacts to special-status plant species would be **less than significant.**

Special-Status Wildlife Species

Endangered, rare, or threatened wildlife species, as defined in CEQA Guidelines, Section 15380(b) (14 CCR Section 15380[b]), are referred to as "special-status wildlife species" and, as used in this report, include (1) endangered or threatened wildlife species recognized in the context of CESA and FESA; (2) California SSC; and (3) mammals and birds that are fully protected species, as described in the California Fish and Game Code, Sections 4700 and 3511 (Appendix C1).

According to Appendix C1, there are 43 special-status wildlife species with recorded occurrences in the project site. 37 species are listed under the federal and/or California endangered species acts. However, these special-status plant species are either not expected to occur or have a low potential to occur. The project site lacks suitable habitat, contains no water resources for suitable habitats, and is disturbed with compact soils. Special-status wildlife species which had a low potential of occurrence include Cooper's hawk (*Accipiter cooperii*), which require dense stands of live oak and riparian woodlands suitable for this species to nest. In addition, 11 bat species came up in the CNDDB search provided in Appendix C-1. However, none of the species have a moderate or high potential to occur during roosting due to the lack of associated suitable habitat. One bat species, pallid bat (*Antrozous pallidus*), has a low potential to occur because it roosts in trees; however, wintering and maternity roosts are not expected and individuals would be expected to leave if the tree is disturbed. Per the CNDDB search (Appendix C1), listed species with recorded occurrences in the project region include Crotch bumble bee (*Bombus crotchii*), least Bell's vireo *(Vireo bellii pusillus*), and mountain lion (*Puma concolor*). Plant species that Crotch bumble bee (*Bombus crotchii*) forage on do not appear on site and least Bell vireo *(Vireo bellii pusillus)* is not expected to occur as the project site and adjacent areas lack the dense riparian habitat suitable for this species to occur. Mountain lion may move through the project site, but it is not expected to have natal dens there or in the vicinity due to the existing development and human activity. Furthermore, the project site is not within any designated critical habitat (USFWS 2020). In addition, the project site does not support any native vegetation communities and the area appears to be regularly maintained, which limits the potential for many native and special-status wildlife species. Therefore, impacts to special-status wildlife species would be **less than significant.**

Nesting Birds

Ground- and vegetation-disturbing activities, if conducted during the nesting bird season (typically February 1 through August 31), would have the potential to result in removal of or disturbance to trees and shrubs that could contain active bird nests. In addition, these activities would also affect herbaceous vegetation that could support and conceal ground-nesting species. Project activities that result in the loss of bird nests, eggs, and young would be in violation of one or more of California Fish and Game Code Sections 3503 (any bird nest), 3503.5 (birds of prey), or 3511 (Fully Protected birds). In addition, removal or destruction of one or more active nests of any other birds listed by the federal MBTA, whether nest damage was due to vegetation removal or to other construction activities, would be considered a violation of the MBTA and California Fish and Game Code Section 3511. The loss of protected bird nests, eggs, or young due to project activities would be a potentially significant impact.

The project site does have ornamental trees and shrubs that could provide nesting habitat for common birds protected under the MBTA (16 USC Sections 703–712) and California Fish and Game Code Sections 3503, 3503.5, and 3513. The nests of the species with eggs or hatched young that do not have the mobility to safely leave the nest could be directly impacted by the removal of vegetation or indirectly impacted if the adults abandon an active nest. According to the MBTA, no construction or other disturbing activities can occur within 300 feet of an active bird nest (500 feet for listed species) from February to September each year. Thus, absent mitigation, **potentially significant impacts** (**Impact BIO-1**) could occur if vegetation clearing is undertaken during the breeding season. Implementation of Mitigation Measure (**MM-)BIO-1**, Nesting Bird Avoidance, would reduce impacts to nesting birds.

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

The project site consists of ornamental, non-native grassland, and paved roadways. As discussed previously, the project site does not support any native vegetation communities and the area appears to be regularly maintained,

which limits the potential for many native plant species. No sensitive communities or riparian habitat occur on the project site (Appendix C1) and the project would not impact these habitats. The loss of non-native grassland on the project site would not be significant impact either locally or regionally. The USFWS identifies a few areas to the north and east of the project site which could support riparian habitat, notably associated with Bailey Canyon (USFWS 2020), but development would be limited to the project site. Figure 3-9 of the DEIR indicates the fuel modification would not impact any adjacent natural habitats. Although fuel modification areas (FMA) proposed may extend slightly beyond the project site, as shown in Figure 3-9, the FMAs would not impact any adjacent natural habitats. However, due to the presence of riparian habitat north and east of the project site, associated with Bailey Canyon, impacts to riparian habitat associated with the proposed project could occur if invasive species are placed onsite. Therefore, impacts would be **potentially significant (Impact BIO-2).** Mitigation measure **MM-BIO-2**, which prohibits the use of invasive species in the project's landscaping plan, would be implemented reduce impacts to nearby riparian habitat.

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

The project site consists of maintained areas of ornamental, non-native grassland, and paved roadways. No wetlands or other jurisdictional waters were observed on the project site (USFWS 2020). Additionally, no wetland or riparian features have been previously identified (Appendix C1). As such, no direct impacts would occur to jurisdictional wetlands or non-wetland waters due to the implementation of the proposed project. However, the project site is adjacent to wetlands and riparian features across the roadways which separate the project site from Bailey Canyon Wilderness Park (USFWS 2020). Due to the proximity of jurisdictional wetlands and waters, potential temporary indirect significant impacts could occur from construction activities resulting from accidental incursion into the areas, generation of fugitive dust, and introduction of chemical pollutants (including herbicides). Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect wetlands/jurisdictional waters. The release of chemical pollutants can reduce the water quality downstream and degrade adjacent habitats. As discussed further in Section 4.10, Hydrology and Water Quality, of this EIR, erosion-control measures would be implemented during construction as part of the Storm Water Pollution Prevention Plan for the project. Prior to the start of construction activities, the contractor is required to file a Notice of Intent with the State Water Resources Control Board to obtain coverage under the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with the Construction and Land Disturbance Activities (Order No 2009-009-DWQ, NPDES No. CAS000002) or the latest approved general permit. This permit is required for earthwork that result in the disturbance of 1 acre or more of total land area, unless it is part of a larger plan of development. The required Storm Water Pollution Prevention Plan will mandate the implementation of best management practices to reduce or eliminate construction-related pollutants in the runoff, including sediment. With compliance with existing regulations, temporary indirect impacts to wetlands would be reduced. However, due to the presence of jurisdictional waters north and east of the project site, associated with Bailey Canyon, impacts to riparian habitat associated with the proposed project could occur if invasive species are placed onsite. Therefore, impacts would be **potentially significant (Impact BIO-3).** Mitigation measure **MM-BIO-2**, which prohibits the use of invasive species in the project's landscaping plan, would be implemented reduce impacts to nearby riparian habitat.

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?

The project site is located within 460 feet of the base of the San Gabriel Mountains, which is a large undeveloped area that supports large terrestrial wildlife capable of movement over large distances. However, the project site is surrounded by residential development to the west and south, the fenced retention basin to the west, and the Mater Dolorosa Retreat Center to the north. Wildlife that may have localized movement within and through the project site, such as mule deer, were observed grazing within the northern portion of the site and within the adjacent Mater Dolorosa Retreat Center, and, it is expected that the mule deer would also use the foothills to the north of the Mater Dolorosa Retreat Center. However, there is no wildlife corridor connection or habitat linkage to other large undeveloped areas to the south of the project site. Wildlife, such as black bear (*Ursus americanus*) and mountain lion, entering the existing residential areas would be at a higher risk of negative interactions with humans (Appendix C1). However, as discussed under Threshold 1, above, since the project is not expected to support natal dens and it is not a part of a wildlife corridor, impacts to bear and mountain lion interactions would not occur. In addition, as discussed under Threshold 2, above, the project site has vegetation that could provide nesting habitat for birds protected under the MBTA (16 USC 703–712) and California Fish and Game Code Sections 3503, 3503.5, and 3513. Thus, **potentially significant impacts (Impact BIO-1**) to nesting birds could occur if vegetation clearing is undertaken during the breeding season. Implementation of **MM-BIO-1**, Nesting Bird Avoidance, would be implemented to reduce the impacts to nesting birds.

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

The project is in compliance with the City's General Plan since it will not remove high quality wildlife habitat, thus it will have a limited impact on resident wildlife, consistent with Goals 1 of Chapter 2, Section 2 of the General Plan. Additionally, the project will not impact any wildlife corridors; therefore, no wildlife passages would be affected, consistent with Policy R5.2. The use of spiked iron fencing is not part of the project design, consistent with Policy R5.2. As such, the project would be consistent with these policies in the City's General Plan. In addition, the City's Community Forest Management Plan incorporates goals including the continuation and enhancement of the tree canopy within the City; promoting increased shade-tree canopy for energy conservation, storm water capture, and improved air quality; and applying best management practices for planting, maintaining, and responding to changed environmental conditions in the community forest. Although various tress would be removed under the proposed project, the project would introduce new trees throughout the site, within the proposed public park, along proposed streets, and within the open space located in the northern portion of the project (see Figure 3-5, Conceptual Landscape Plan). Therefore, with implementation of the project's landscape plan, the project would be consistent with the goals outlined in the Community Forest Management Plan. Per **MM-BIO-3,** Protected Tree Replacement, the project would be required to replace existing protected trees on-site on a 1:1 ratio.

The City's Tree Preservation and Protection Ordinance protects California scrub oak (*Quercus berberidifolia*), coast live oak (*Quercus agrifolia*), coastal scrub oak (*Quercus dumosa*), Engelmann oak (*Quercus engelmannii*), Southern California black walnut (*Juglans californica*), and western sycamore (*Platanus racemosa*). The City's Tree Preservation and Protection Ordinance provides a permitting process for the removal of these protected trees that incudes mitigation in the form of replacement trees in accordance with the guidelines described in Section 4.4.2, Relevant Plans, Policies, and Ordinances.

Ten coast live oak trees were observed during the survey and a tree inventory report was conducted for the project site (Appendix C2). As mentioned in Section 4.4.2, 101 trees were inventoried within the project site, including 10 coast live oak (*Quercus agrifolia*) trees. It is possible that some trees would be preserved at the project site. However, to provide a conservative analysis, it has been assumed that all 101 trees, 10 of which are protected trees by the City Tree Preservation and Protection Ordinance, would be removed as part of the project. All 10 protected trees meet the City's criteria for a protected oak tree, based on the City's Tree Preservation and Protection Ordinance. According to the Ordinance, any protected tree located on the project site that requires removal must be replaced on a one-to-one basis with a like species. The City's Tree Preservation and Protection Ordinance identifies tree replacement requirements for tree removal associated with a development project, such as the proposed project. Thus, due to removal of 10 protected trees on-site, the project would result in **potentially significant impacts (Impact BIO-3)** Implementation of **MM-BIO-3,** Protected Tree Replacement, would be implemented to reduce the impacts to the City's protected trees to less than significant by requiring the 1:1 replacement of those protected trees impacted by development and conducting a 5 year monitoring program to ensure their continued viability.

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?

The project site is not located within any habitat conservation plan, natural community conservation plan, or other conservation plans (Appendix C1). As such, the 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. **No impact** would occur.

4.4.6 Mitigation Measures

The following mitigation measures shall be implemented during and prior to project construction in order to reduce potential project-related impacts to biological resources to a less-than-significant level.

MM-BIO-1 **Nesting Bird Avoidance**. Initiation of construction activities (i.e., initial vegetation clearing) should avoid the migratory bird nesting season (February 1 through August 31), to reduce any potential significant impact to birds that may be nesting on the project site. If construction activities must be initiated during the migratory bird-nesting season, an avian nesting survey of the project site and contiguous habitat within 500 feet of all impact areas must be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a qualified wildlife biologist within 72 hours prior to the start of construction in accordance with the Migratory Bird Treaty Act and California Fish and Game Code.

If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no disturbance buffer, which shall be determined by the biologist based on the species' sensitivity to disturbance (typically 50 feet for common, urban-adapted species, 300 feet for other passerine species, and 500 feet for raptors and special-status species). The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing. A qualified biologist (with the ability to stop work) shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests occur.

MM-BIO-2 **Invasive Species.** The use of invasive plant species listed in the California Invasive Plant Council's Inventory as having a rating of Limited, Moderate, or High shall not be allowed for landscaping purposes.

MM-BIO-3 **Protected Tree Replacement.** The City's Tree Preservation and Protection Ordinance (Chapter 12.20) identifies tree replacement requirements for tree removal associated with a development project. In total, ten protected trees may be removed. As such, they shall be replaced at a minimum with a 24-inch box tree, on a 1:1 basis with a like species. The specific location of individual mitigation tree plantings on site would be addressed in the mitigation planting plan or landscape design plan prepared for the site.

In addition, all mitigation tree plantings shall be subject to a 5-year monitoring effort by an independent third-party certified arborist. The monitoring effort shall consider growth, health, and condition of the subject trees to evaluate success. The monitoring effort may result in a recommendation of remedial actions, such as replacing trees that are not thriving, should any of the tree plantings exhibit poor or declining health.

4.4.7 Level of Significance After Mitigation

All impacts (**Impact BIO-1, Impact BIO-2,** and **Impact BIO-3)** were determined to be **less than significant** after the incorporation of **MM-BIO-1** through **MM-BIO-3**.

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SOURCE: County of Los Angeles 2020; Bing Maps

DUDEK

0 75 150 Feet

FIGURE 4.4-1

Vegetation and Land Cover Map

The Meadows at Bailey Canyon EIR

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4.5 Cultural Resources

This section describes the existing cultural resources conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. A Historical Resources Technical Report and an Archaeological Resources Assessment were prepared for the proposed project by Dudek in November 2020. These reports are included as Appendices D1 and D2 of this EIR, respectively.

4.5.1 Existing Conditions

4.5.1.1 Project Site and Surrounding Area

The proposed project site is currently undeveloped and no structures are present on site. However, the Mater Dolorosa Retreat Center borders the project site to the north and the project site is being acquired from the Mater Dolorosa Retreat Center. Therefore, because of the project's proximity to the Mater Dolorosa Retreat Center and its association with the adjacent institutional use, a historical evaluation of the Mater Dolorosa Retreat Center is provided.

4.5.1.2 Historical Resources

4.5.1.2.1 Background Research

CHRIS Records Search

A California Historical Resources Information System (CHRIS) records search was completed by South Central Coastal Information Center (SCCIC) staff for the project site and a 1-mile records search buffer on June 9, 2020. This search included the SCCIC's collections of mapped prehistoric, historic, and built environment resources, Department of Parks and Recreation Site Records, technical reports, and ethnographic references. Additional consulted sources included historical maps of the project Site, the California Register of Historical Resources (CRHR), the California Historic Property Data File, the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. Dudek reviewed the SCCIC records to determine whether implementation of the proposed project would have the potential to impact known and unknown cultural resources (Appendix D1).

No previously conducted cultural resources studies or previously recorded resources were identified within the project site. A total of 17 previously conducted cultural resources studies and 56 previously recorded resources were identified within 1 mile of the project site. None of these studies or resources are relevant to the built environment within the current project site. Full records search results are included in Appendix D2.

Previous Evaluations of the Mater Dolorosa Retreat Center Property

In 1992, the Mater Dolorosa Monastery building, located directly to the north of the site, was nominated by the Sierra Madre Historic Preservation Society and concerned neighbor group "Friends of the Monastery" as a City of Sierra Madre Cultural Landmark. However, this nomination was rejected by the City Council in July 1992 (Appendix D1). Dudek reached out to the Sierra Madre Historic Preservation Society and to an archivist at the City of Sierra

Madre Library. However, neither repository retained a copy of the original nomination. A Public Records Act request was sent to the City of Sierra Madre on November 12, 2020, to obtain this document or the City Council meeting report regarding the decision of eligibility, but no response has been received to-date.

According to newspapers, the justification for nomination was "The building (monastery) is at least 50 years old having been built in 1931 and dedicated a year later. It was constructed by a former mayor William J. Schiltz who also built St. Rita's Church. The Monastery was built at the height of the depression and served as employment for Sierra Madreans. During World War II, in 1943, the building was used as a U.S. Army Recuperation hospital. It is one of the ultimate landmarks of Sierra Madre and can be seen from four freeways. It was designed by a priest, Father Edmund Walsh and can be retrofitted at much less cost" (Appendix D1). It should be noted that the Mater Dolorosa Retreat Center is on the same parcel as the project site, which is currently split within three different lots; however, a lot line adjustment would be processed to consolidate the two lots that make up the project site into one and adjust the site's northern boundary further to the north. The Mater Dolorosa Retreat Center is not a part of the project site and no changes in use are proposed.

Building Development and Archival Research

Building development and archival research were conducted for the project site and the adjacent Mater Dolorosa Retreat Center in an effort to establish a thorough and accurate historic context for the significance evaluations, and to confirm the building development history of the project site, the adjacent Mater Dolorosa Retreat Center, and associated parcels.

Mater Dolorosa Retreat Center

On October 20, 2020, Dudek met with Michael Cunningham, Janet Salinsky, and Brother John Rockenbach (one of the Passionist brothers) for a brief docent tour and to share research materials and historical photographs. Mater Dolorosa staff reviewed building construction dates, interior and exterior alterations, building uses, and daily operations for the visiting Dudek staff. After the visit, Michael Cunningham emailed additional photographs, newspaper articles, and historical documentation of the Mater Dolorosa Retreat Center property.

Los Angeles County Office of the Assessor

On November 3, 2020, Dudek researched property records for the Mater Dolorosa Retreat Center property to establish dates of construction.

Historical Newspaper Search

Dudek reviewed historical newspapers covering the City and overall County of Los Angeles in an effort to understand the development of the project site. All information obtained from the historical newspaper search was incorporated into the historic context.

Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were reviewed for the City for the years 1887, 1888, 1889, 1890, 1908, 1927, and the 1941 update. However, the Mater Dolorosa Retreat Center, which includes the project site, is excluded from all maps.

Historical Aerial Photographs

A review of historical aerial photographs was conducted as part of the archival research effort from the following years: 1928, 1933, 1938, 1944, 1953, 1954, 1956, 1960, 1964, 1972, 1976, 1977, 1978, 1980, 1981, 1982, 1983, 1994, 2002, 2003, 2005, 2009, 2010, 2012, 2014, and 2016. Table 4.5-1 discusses the development of the areas surrounding the project site (Appendix D1).

Table 4.5-1. Historical Aerial Photograph Review of Project Site and Surrounding Area

Photograph Year	Observations and Findings
1928	In the oldest available aerial photograph, the outline and general layout of the Mater Dolorosa Passionist Retreat Center property, which includes the project site, is visible. A large orchard dominates the northeast and northwest corners of the property, which abut the foothills to the north. Two intertwined entry roads provide access to the property from the southeast corner. There are multiple buildings present at the property, but the church and monastery building in the upper center portion of the property have not yet been constructed.
1933	By 1933, the Monastery building (1931), a distinctive, slightly curving C-plan building appears in the center of the property. A small lawn and fountain area appear just south of the new building. Two other small buildings appear on the property, just north of the new building, as well as a rectangular water feature/pond northwest of the building. Orchard groves are still present in the northeast and northwest corners of the property, and the site access is still from the southeast corner of the property.
1938	By 1938, the road and oval drive on the south side of the Monastery building appears to have been paved. One small L-plan building appears just east and across the access road from the Monastery building. The orchards and pond in the northern portion of the parcel are still present. Additionally, the southern portion of the parcel also appears under cultivation, with several different fields and unpaved roads leading to the southern edge of the parcel. A large firebreak is also visible north of the parcel.
1944	By 1944, the oval drive has been removed and replaced with a large lawn and footpaths. A square formal garden with a fountain appears southeast of the Monastery building. The cultivated fields in the southern portion of the property appear to have consolidated into fewer, larger fields and a single road leading south from the Monastery building. The orchards in the northern part of the parcel appear more mature and expand inward toward the center of the property. The firebreak north of the parcel appears much wider and several earthen terraces are visible above that, likely for soil erosion control. West of the property is a large, graded area.
1953	By 1953, the biggest change to the Mater Dolorosa Retreat Center is the construction of the large, T-plan Retreat Center building (which is a part of the Mater Dolorosa Retreat Center) north of the Monastery building. This involved the demolition of a portion of the northeastern orchards, of which only a small square plot remained. The southern portion of the property appears to no longer be under cultivation and appears to be either a lawn or fallow. The Hastings Ranch housing subdivision north of Alegria Avenue appears to be nearly complete. East of the Mater Dolorosa Retreat Center the earthen Bailey Canyon Dam appears for the first time.
1954	By 1954, a second access road (North Sunnyside Avenue) in the southwest portion of the property now leads to the Monastery building. More tree plantings appear just south of the Monastery building.

Table 4.5-1. Historical Aerial Photograph Review of Project Site and Surrounding Area

Photograph Year	Observations and Findings
1956	Two new buildings appear: one small building east of the Mater Dolorosa Retreat Center building in the northeast corner of the property, and a second larger rectangular plan building appears southeast of the Monastery building, along the southeast access drive. The area between the Monastery building and Mater Dolorosa Retreat Center building appears to be planted with lawns, trees, and some paths through the area appear to be formalized. Some tree plantings appear along the new southwest access drive. The northeastern edge of the Hastings Ranch housing development, previously only located north of Alegria Avenue and south of the project site, appears to now encroach along the western edge of the property. Similarly, to the south, several smaller scale housing developments appear to encroach at the southern parcel boundary between Fairview Avenue and Carter Avenue.
1960	No discernable changes.
1964	The small building east of the Mater Dolorosa Retreat Center building appears to have been demolished and the area converted to a wide lawn.
1972	No discernable changes at the Mater Dolorosa Retreat Center. South of the Mater Dolorosa Retreat Center the last remaining undeveloped property appears to have been converted to a single-family housing subdivision (Kinneloa Terrace).
1976	No discernable changes.
1977	No discernable changes.
1978	No discernable changes.
1980	No discernable changes.
1981	No discernable changes.
1982	No discernable changes.
1983	No discernable changes.
1994	The Monastery building appears to have been demolished and removed from the property. The features surrounding the demolished building remain: the driveway, square plan garden and fountain, and plantings. A large, L-plan addition has been made to the eastern portion of the Mater Dolorosa Retreat Center building, extending into the lawn on that side of the property, and removing the remaining orchard and replacing it with a parking lot. North Sunnyside Avenue, the western drive, appears to be the main access road for the property.
2002	Three new gardens appear in the former building footprint for the Monastery building, one amphitheater with plantings, one cross-shaped garden, and one round garden. The original square plan garden has been removed.
2003	The rectangular building on the eastern entrance drive appears to have been removed.
2005	A new asphalt parking lot appears near the northwestern orchard, along the Sunnyside Avenue access road.
2009	No discernable changes.
2010	The 2005 parking lot has been removed and now appears to be a large lawn. A small terraced garden appears just east of it with a pergola shelter.
2012	No discernable changes.
2014	No discernable changes.
2016	The Stations of the Cross garden appears to be under construction

Source: Appendix D1

4.5.1.2.2 Cultural Setting

Historic Period Overview

Post-Contact history for the State of California is generally divided into three periods: the Spanish Period (1769–1821), Mexican Period (1821–1848), and American Period (1846–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement in San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American Period when California became a territory of the United States. Additional information about the Spanish Period, Mexican Period, and American Period is provided in Appendix D1. Appendix D1 also provides a historical overview of the City.

Passionist Order and Development History of Mater Dolorosa

The Mater Dolorosa Retreat Center is operated by the Passionist Order of the Roman Catholic Church. Additional information about the Passionist Order and their religious symbolism is provided in Appendix D1.

In 1923, Bishop John Joseph Cantwell of Los Angeles invited the Passionist order to Southern California. They were placed at St. Rita's in Sierra Madre in September of the same year and began seeking a permanent home for a monastery and retreat center. In 1924, the Passionists at St. Rita's purchased the Mater Dolorosa property and began plans to build a monastery there. At the time the property was acquired, there was a single farmhouse, a pair of natural springs, and several large olive orchards. At this time, the property was temporarily called "Mount Olive" due in part to the olive groves that dominated the site historically (Appendix D1).

It was not until 1931 that construction of the Monastery building began. The Monastery building was a traditional-style monastery with belltower, outdoor pulpit, a private chapel, a public chapel, 35 dormitory cells for priests, brothers, and novitiates, kitchens, a walled cloister, and patio. The designer of the building was Father Edmund Walsh who used a traditional "monastic floor plan" and "imposing Spanish design" (Appendix D1), and the general contractor was William J. Schlitz, a Sierra Madre local and active participant in the church. In addition to building the monastery, Schlitz donated materials, sculptures, and built several of the original stations of the cross near the monastery. In 1933, Schlitz also razed the old farmhouse building on the property, which the priests and brothers had been living in before the monastery was completed (Appendix D1).

The monastery officially opened in 1932 and the first services were held that spring, followed closely by the first retreat in May. In 1934, as the property continued to expand, a "service quarters" building was added to the property. The building included a two-story house with a garage, tool shed, gas and oil pumps, apartments for the four employees, and a lath house for growing plants used at the property. Other small art pieces that were incorporated into the Mater Dolorosa Retreat Center Chapel and Monastery grounds included paintings, triptychs, and statutes that were received over time. A walled garden adorned with Stations of the Cross plaques was eventually added by 1936 (Appendix D1).

During the early 1940s, the Passionists offered recuperative retreats for returning military service members as their popularity grew. By 1947, the Passionists decided the 1932 monastery was no longer sufficient for their needs and a new building was needed. To raise funds, the Passionists at Mater Dolorosa and the Mater Dolorosa Laymen's League held their first, annual Family Fiesta. To support the annual Family Fiesta, several large flat terraces were

erected south of the Monastery building for rides and food tents. Though originally started to fund construction, the Family Fiesta tradition continue for more than 70 years. Construction on the Mater Dolorosa Retreat Center building began in 1949. The new building featured individual bathrooms for 78 private rooms, a new dining room and kitchen, a library, new public chapel, and several conference room/meeting halls. The new Mater Dolorosa Retreat Center was completed in May 1950 (Appendix D1).

To further honor the new Mater Dolorosa Retreat Center building and the Mater Dolorosa property, in 1950 William J. Schlitz, the original general contractor who built the Monastery building, began an ambitious stone masonry project creating 14 shrines for the Stations of the Cross using local and foreign stones, concrete, wood, cement block, petrified wood, marble, and other materials. The shrines would create homes for the bas relief panels and statues depicting the 14 Stations of the Cross and was located in the olive grove between the Monastery and new Mater Dolorosa Retreat Center buildings. Schlitz completed each station individually, completing the final station of his project in 1962 (Appendix D1).

In 1983, the Mater Dolorosa Advisory Committee was formed and agreed to expand the Mater Dolorosa Retreat Center. This group raised the money and in 1985, the Father Isadore O'Reilly Wing addition to the Mater Dolorosa Retreat Center building was dedicated. The new addition on the east end of the Mater Dolorosa Retreat Center added several conference rooms, offices, and for the first time, double rooms for couples' retreats. However, instead of alleviating pressure from demand, the expansion prompted more schools, parish groups, and others requested to use the facility more often (Appendix D1).

The 1987 Whittier Earthquake and more acutely the 1991 Sierra Madre Earthquake, 5.8 magnitude, drastically damaged the Monastery building. The 15 brothers and priests living in the Monastery building had to leave and took up residences in a nearby Assumption Church convent in Pasadena. Initially, the Sierra Madre community was divided about demolishing the damaged Monastery. In 1992, the Mater Dolorosa Advisory Committee and remaining brothers and priests applied for permits to raze the Monastery, citing dwindling Passionist enrollment and the high cost of restoration and earthquake retrofitting. Proponents of preserving and retrofitting the building, including the City's Cultural Heritage Commission, argued it could be reused as a school or retirement home, and attempted to add it to the City of Sierra Madre's Cultural Landmark Register, but this was ultimately rejected by the City Council in July 1992, and a demolition permit was awarded, and the Monastery building was razed in April 1993. Followed by the removal of the original walled garden south of the Monastery building in 1995 (Appendix D1).

New gardens including the Garden of Seven Sorrows, Sacred Heart Plaza, and the amphitheater were built on the old Monastery foundations by 1999. Construction of these three gardens not only added new contemplative spaces and landscaping elements to the Mater Dolorosa Retreat Center, but also reused existing circulation and paths meant for accessing the Monastery building. The redesigned landscape allowed contemplative spaces and trails to move from the area south of the Mater Dolorosa Retreat Center and north of the now-demolished Monastery, to anywhere south of the Mater Dolorosa Retreat Center (Appendix D1).

In 2002, more renovations to the Mater Dolorosa Retreat Center introduced another conference room as well as major renovations to the chapel interior. Chapel changes included the reversal of the room orientation 180 degrees, to move the entrance to the north side and the sacristy to the south side. More recently the Stations of the Cross sculptures and grottos were refurbished for their 40th anniversary in 2016. Just a year later, a new garden space in the old olive grove was added, called the Garden of Gethsemane, situated among the shrines for the Stations of the Cross (Appendix D1).

4.5.1.2.3 Field Survey

Methods

Dudek Senior Architectural Historian Sarah Corder, MFA, and Architectural Historian Kate Kaiser, MSHP, conducted a pedestrian survey of the Mater Dolorosa Retreat Center property (which includes the project site) for historic built environment resources on October 20, 2020. The survey entailed walking the exteriors and interiors of the Mater Dolorosa Retreat Center buildings, documenting each building and landscape structure with notes and photographs, specifically noting character-defining features, spatial relationships, paths of circulation, historic landscape features, and observed alterations. Dudek documented the fieldwork using field notes, digital photography, close-scale field maps, and aerial photographs. Photographs of the Mater Dolorosa Retreat Center, which includes the project site, were taken with a digital camera. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office (Appendix D1).

Results

One property over 45 years old, the Mater Dolorosa Retreat Center, was identified as a result of the pedestrian survey. The property contains four buildings and seventeen structures over 45 years old requiring recordation and evaluation for historical significance: the Mater Dolorosa Retreat Center (1951), Staff House (1934), Fiesta Terrace restrooms (circa 1947), Fiesta Terrace kitchen and freezers (circa 1947), the Mater Dolorosa Grotto (circa 1930), stone stairwells and stone-lined paths (circa 1930–1950), the Sunnyside Avenue gate (circa 1947), and the 14 Stations of the Cross shrines (1950–1962). Five modern structures are less than 45 years old, but are included as well, as they are large components of the property. Each of these buildings and structures are depicted in Figure 4.5-1, Site Map. Appendix D1 provides a detailed physical description of the property and its major features.

4.5.1.3 Archaeological Resources

4.5.1.3.1 Background Research

CHRIS Records Search

As discussed in Section 4.5.1.2.1, Background Research, a CHRIS records search was completed by SCCIC staff for the project site and a 1-mile records search buffer on June 9, 2020. This search included a review of archaeological resources in addition to the historical resources previously discussed. Dudek reviewed the SCCIC records to determine whether implementation of the proposed project would have the potential to impact known and unknown cultural resources (Appendix D2).

Previously Recorded Cultural Resources

As discussed in Section 4.5.1.2.1, the SCCIC records indicate that 17 previous cultural resource studies have been conducted within the records search area between 1993 and 2016. However, none of these studies are mapped as overlapping/intersecting the Mater Dolorosa Retreat Center, which includes the project site. Additionally, the SCCIC records indicate that 56 previously recorded cultural resources are located within the records search area. Of these, two resources are historic-period sites and the remaining 54 are historic built environment resources. None of the resources are located within the project site. A list of these previous technical studies is included in Appendix D2. Table 4.5-2 summarizes the two historic-period sites identified within the records search area (Appendix D2).

Table 4.5-2. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Proposed Project Site – Archaeological Resources

Primary Number (P-19-)	Trinomial (CA-LAN-)	Description	Recording Events	NRHP Status Code	Proximity to Proposed Project Site
186535	—	Historic Site: The Angeles National Forest	1982 (Gray Reynolds); 1979 (Jim Arbuckle); 1974 (G. Smith and T. Suss); 1959 (E. Fraisher)	1: Listed on the CR	Approximately 2460 feet north of proposed project site
187821	—	Historic Site: Historic Mount Wilson Trail; 7.5 miles in length.	2006 (K. Brasket and D. Peebles)	7: Not evaluated	Approximately 3940 feet east of proposed project site

Source: Appendix D2

Review of Historical Topographical Maps and Aerial Photographs

Dudek consulted historical topographic maps and aerial photographs through the Nationwide Environmental Title Research LLC (NETR) and the University of California, Santa Barbara's Map and Imagery Laboratory (UCSB MIL) to better understand any modern human-made changes to the project site and surrounding properties over time. Additional aerial photographic information for the years not available through NETR or UCSB MIL were gleaned from the Phase I and II Environmental Site Assessment Report prepared by Stantec Consulting Services Inc. (Stantec) for the proposed project (Appendix F1). The review of aerial photographs was previously discussed in Section 4.5.1.2.1 and Table 4.5-1. Historical topographic maps reviewed are available for the years 1894 through 2018. A discussion of the topographical map review is provided in Appendix D2.

NAHC Sacred Lands File Search

As part of the process of identifying cultural resources within or near the proposed project, Dudek contacted the Native American Heritage Commission (NAHC) on October 6, 2020, to request a review of the Sacred Lands File (SLF). The NAHC replied via email on October 8, 2020, stating that the SLF search was completed with negative results. Because the SLF search does not include an exhaustive list of Native American cultural resources, the NAHC provided a list of eight Native American individuals that should be contacted for more information on potential tribal sensitivities regarding the proposed project. In compliance with Assembly Bill (AB) 52 and Senate Bill (SB) 18, the City has contacted all NAHC-listed traditionally geographically affiliated tribal representatives that have requested project notification. Documents related to the NAHC SLF search are included in Appendix D2 and an analysis of potential impacts to tribal cultural resources is provided in Section 4.18, Tribal Cultural Resources, in this EIR.

4.5.1.3.2 Field Survey

Methods

The intensive-level survey methods consisted of a pedestrian survey conducted in parallel transects, spaced no more than 15 meters apart (approximately 50 feet), over the entire proposed project site, from east to west. Deviations from transects only occurred in areas containing steep slopes, dense vegetation, or impassible natural features. The ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural

midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historical artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. No artifacts were collected during the survey (Appendix D2).

All fieldwork was documented using field notes and an Apple Generation 6 iPad (iPad) equipped with ESRI Collector and Avenza PDF Maps software with close-scale georeferenced field maps of the proposed project site, and aerial photographs. Location-specific photographs were taken using the iPad's 8-mega-pixel resolution camera. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California office. All field practices met the Secretary of Interior's standards and guidelines for a cultural resources inventory (Appendix D2).

Results

The intensive-level archaeological survey of the project site was conducted October 30, 2020, by Dudek archaeologist, Linda Kry. Ground visibility throughout the proposed project site was generally good (80%–90%). The site generally slopes south and includes terraces immediately south of the Mater Dolorosa Retreat Center. Soils within the project site are consistent with soils defined by the United Stated Department of Agriculture. The project site is generally undeveloped with ornamental trees (approximately 10%) and landscaped areas, concrete retaining walls along the northern perimeter of the site, including access roads through the site lined with rocks. A portion of the northeast area of the project site, immediately south of the staff house and garage associated with the Mater Dolorosa Retreat Center, was partially covered on the surface with gravel. Visible disturbances to the project site include site maintenance activities and activities associated with the Mater Dolorosa Retreat Center. Additionally, the landscape has an undulating terrain, with bioturbation activities throughout (Appendix D2). Photographs taken during the archaeological filed survey are provided in Appendix D2.

The intensive-level archaeological survey resulted in the identification of widely dispersed cultural material on the surface of the site. The materials observed included both historic-period and modern items within a disturbed context, in other words, displaced from the original deposited location, which may be attributed to previous uses of the site for agricultural purposes, retreat activities, as well as site maintenance activities. Moreover, the northern portion of the project site included remnants of structural debris comprised of red brick and may represent the structural remains of the former Monastery. The archaeological survey did not identify in situ archaeological resources or features; however, the identification of surficial evidence of historic-period cultural material indicates that the project site has potential to support the presence of subsurface archaeological deposits (Appendix D2).

4.5.2 Relevant Plans, Policies, and Ordinances

Federal

There are no applicable federal regulations related to cultural resources.

State

California Register of Historical Resources

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California"

(California Public Resources Code Section 5020.1[j]). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code Section 5024.1[a]). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to California Public Resources Code (PRC) Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

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

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- California Public Resources Code Section 21083.2(g) defines "unique archaeological resource."
- California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of an historical resource.
- California Public Resources Code Section 21074(a) defines "tribal cultural resources."
- California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- California Public Resources Code Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between

artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5[b]). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5[a]). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5[a]).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5[b][1]; PRC Section 5020.1[q]). In turn, CEQA Guidelines section 15064.5(b)(2) states the significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a], [b], and [c]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2[a]; CEQA Guidelines Section 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Sections 21074[c] and 21083.2[h]), further consideration of significant impacts is required. CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5[b]). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact NAHC within 24 hours (Section 7050.5[c]). NAHC will notify the "most likely descendant." With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

Local

City of Sierra Madre Historic Preservation Ordinance (Chapter 17.82)

This analysis was completed in consideration of all sections of the City of Sierra Madre Historic Preservation Ordinance (Chapter 17.82). Sections most relevant to this analysis are provided in the following discussion.

17.82.020 - Purpose and Intent.

The purpose of this Chapter is to specify significance criteria for the designation of historic resources, procedures for designation, and review procedures. The City Council determined:

A. That the character and history of the city are reflected in its cultural, historical and architectural heritage;
B. That these historic foundations should be preserved as living parts of community life and development to build an understanding of the city's past so that future generations may have a genuine opportunity to appreciate, enjoy and understand the rich heritage of the city;
C. That the city's total number of public, commercial and residential structures is fewer than three thousand five hundred units, and that without diligent efforts to minimize the demolition and loss of the city's historical landmarks, the rich heritage of the city will be eroded over time;
D. That pursuant to the provisions of the National Historic Preservation Act of 1966, as amended, the city of Sierra Madre, the state of California, and the United States Congress, to develop preservation programs and activities to give maximum encouragement to agencies and individuals undertaking preservation of the city's unique architectural and historical heritage;

E. Therefore, the purpose of this chapter is the protection, appreciation and preservation of the historic landmarks of the city through a partnership between the cultural heritage commission and the property owners/residents, the business sector and the community at large to retain and protect those historic landmarks which preserve and enhance out small town atmosphere and:

1. To safeguard the city's unique historic heritage as embodied and reflected in the city's diverse architectural and cultural history,
2. To encourage and facilitate public knowledge, understanding and appreciation of the city's historic past and unique sense of place,
3. To foster civic and neighborhood pride and a sense of identity based on the recognition and use of historic resources,
4. To promote the enjoyment, celebration and use of historic resources appropriate for the education and recreation of the people of the city,
5. To preserve diverse architectural styles, patterns of development, and design preferences reflecting phases of the city's history and to encourage complementary contemporary design and construction and inspire a more livable environment,
6. To enhance property values and to increase economic and financial benefits to the city and its inhabitants through the exploration of creative financial incentives for preservation,
7. To protect and enhance the city's attraction to tourists and visitors thereby stimulating commerce,
8. To identify as early as possible and resolve conflicts between the preservation of historic landmarks and alternative land uses,
9. To integrate the preservation of historic landmarks into public and private land use management and development processes,
10. To conserve valuable material and energy resources by ongoing use and revitalization of the existing built environment,
11. To stabilize neighborhoods through the preservation of historic landmarks,
12. To encourage public awareness and participation in identifying and preserving historical and architectural landmarks, thereby increasing community pride in the city's historical heritage,
13. To identify and make available the economic benefits of preservation of historic resources to the city and its inhabitants,
14. To take all reasonable and necessary steps to safeguard the property rights of owners of properties which are subject to this chapter. (Ord. 1134 § 2 (part), 1997)

17.82.050 – Designation Criteria

For the purposes of this chapter, an improvement, natural feature, or site may be designated a historic landmark by the city council upon a recommendation by the commission if it meets at least one of the following criteria (Ord. 1134 Section 2 (part), 1997):

A. Historic. It was the site of, or is associated with local, state or national cultural, social, economic, political or natural history, events or persons significant to the history of Sierra Madre, or it reflects significant geographical patterns, including those associated with different eras of settlement and growth, particular transportation modes, or distinctive examples of park or community planning.

B. Architectural. It is representative of the work or is one of a few remaining examples of a notable builder, designer or architect, or, it embodies distinctive characteristics of a style, type, period or method of construction, or, is a valuable example of architectural achievement or innovation such as the use of indigenous materials or craftsmanship..

City of Sierra Madre General Plan

The General Plan includes the following objectives and policies relevant to the proposed project with regard to cultural resources (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Chapter One: Land Use

Objective L46: Identifying and encouraging the preservation of significant historic resources.

Objective L47: Preserving in the long-term significant architectural and historical landmarks and districts.

Sierra Madre Municipal Code

Chapter 17.82 – Historic Preservation

Chapter 17.82 of the Sierra Madre Municipal Code contains the City's Historic Preservation Ordinance. The purpose of this ordinance is to protect and preserve the historic landmarks of the City through a partnership between the cultural heritage commission and the property owners and residents, businesses, and community at large to retain and protect those historic landmarks which preserve and enhance the City. This ordinance contains designation criteria for identifying potential historic resources or historic landmarks within the City. Provisions for adaptive reuse of historic landmarks and de-designation are also provided in the City's Historic Preservation Ordinance.

4.5.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to cultural resources would occur if the project would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.
3. Disturb any human remains, including those interred outside of dedicated cemeteries.

4.5.4 Project Design Features

There are no project design features that apply to cultural resources.

4.5.5 Impacts Analysis

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

In order to determine if the proposed project would impact historical resources under CEQA, the Mater Dolorosa Retreat Center property, located at 700 North Sunnyside Avenue (APN 5761-002-008), was evaluated for historical significance and integrity in consideration of NRHP, CRHR, and City of Sierra Madre designation criteria and integrity requirements. The Mater Dolorosa Retreat Center contains four buildings, twenty structures, and multiple landscape elements including paths, trails, stairs, gardens, contemplative spaces, and historic aged trees. Each of these are described in detail in Appendix D1 and their locations are depicted in Figure 4.5-1, Site Map.

CRHR Statement of Significance

The Mater Dolorosa Retreat Center does not meet any of the criteria for listing in the CRHR, either individually or as part of an existing historic district, based on the following evaluation of CRHR designation criteria and integrity requirements.

Criterion 1: Is associated with events that have made a significant contribution to the broad patterns California's history and cultural heritage.

Archival research found that the establishment of the Monastery, and later the Mater Dolorosa Retreat Center, were important to the Passionist Order as the first of several retreat centers established in the western United States. While the Mater Dolorosa Retreat Center property is representative of the expansion of the Order's growth in the west, since it was the first monastery built west of Kansas, it no longer retains the original design elements associated with this period of expansion. While the basic principles of the Passionist Order are still practiced at the Mater Dolorosa Retreat Center property, the original pre-1923 farm house where the priests and brothers first lived when they arrived in California, and the 1931 Monastery building have since been razed. The property is still used as a retreat center and living quarters for the remaining Passionist priests and brothers; however, the demolition of the original 1930s buildings on the property severed the link to the earlier period of Passionist development in the west.

The next major period of development on the property occurs in the 1950s. This period of development began with the construction of the current Mater Dolorosa Retreat Center (1950), thus representing a period of growth and expansion for the Mater Dolorosa. Other minor improvements throughout the property, including the construction of the Event Terraces, construction of the Stations of the Cross, and other landscape developments continued through the early 1960s. Despite this period being indicative of the growing popularity of the monastery's retreats to the Catholic community in Los Angeles County, no connection to broader periods of Passionist development at the state, national, or local level of significance were identified through archival research. Furthermore, a prominent, two-story addition was made to the Mater Dolorosa Retreat Center in 1985, diminishing its integrity of association to this period.

In summation, while the property was once historically significant to the history of the Passionist Order in the United States and in California, alterations to the existing buildings and structures and the demolition of the original 1931 Monastery building have diminished the integrity of this association such that it can no longer convey significance under these criteria. Therefore, the property does not appear eligible under Criterion 1 of the CRHR.

Criterion 2: Is associated with the lives of persons significant in our past.

Archival research did not indicate that any previous property owners, residents, retreat organizers, or people who have worked at this property are known to be historically significant figures at the national, state, or local level. As such, this property is not known to have any historical associations with people important to the nation's or state's past. Furthermore, to be found eligible under Criterion 2 the property has to be directly tied to an important person and the place where that individual conducted or produced the work for which he or she is known. This property does not appear to be associated with any individual's important historic work and does not appear eligible for the CRHR under Criterion 2.

Criterion 3: Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of an important creative individual, or that possess high artistic values.

The Mater Dolorosa Retreat Center, as a retreat center and monastery property type, is distinctive and unique for the City of Sierra Madre, but is one of many monasteries and Christian religious retreat centers in the Los Angeles basin. For example, the Mary and Joseph Retreat Center in Rancho Palos Verdes, the Sacred Heart Retreat House in Alhambra, St. Joseph's Salesian Youth Retreat Center in Rosemead, the Divine Word Seminary and Retreat House in Norco, and the Serra Retreat Center and Franciscan monastery in Malibu. Other convents and monasteries include Dominican and Franciscan convents in Los Angeles, Glendale, Malibu, Rancho Palos Verdes, and Alhambra. There are also several Buddhist monasteries and non-denominational retreat centers throughout the Los Angeles area. So, while this property type is somewhat uncommon, this resource is not unique.

From an architectural style standpoint, Spanish Colonial Revival is the dominate style seen throughout the property. The use of the Spanish Colonial Revival style began with the original 1931 Monastery building and continued to be used in more recent construction projects on the property. Despite the fact that the Spanish Colonial Revival Style was used throughout the property, demolition of the Monastery building and the addition to the Mater Dolorosa Retreat Center have impacted the property's ability to read as a good example of the style. Additionally, the only other Spanish Colonial Revival building on the property, the Staff House, meets the basic design and material requirements for the style but it does not serve as a good representation of the style. Furthermore, the remaining two buildings, the restroom and kitchen, are utilitarian in both style and material and do not embody the distinctive characteristics of any style or period of construction. In summary, the extant buildings at the Mater Dolorosa Retreat Center no longer serve as intact and good representations of the Spanish Colonial Revival style of architecture.

With regards to the original builder, the Mater Dolorosa Retreat Center building can be said to be the work of a master builder: J.A. McNeil Company. The building company was known for constructing religious and institutional buildings early in their history (1944–1966), before transitioning to campus buildings at the University of Southern California (USC) and commercial buildings throughout Southern California. From a typology standpoint, the Mater Dolorosa Retreat Center is not the only Los Angeles-area retreat center and religious building built by J.A. McNeil Company. Other examples of this building type included Mount Carmel Priory and Convent in 1949 and St. Vincent de Paul School and Convent in 1953. Additionally, the Spanish Colonial Revival style was a very popular style used by J.A. McNeil Company's and many other builders during this time period. Therefore, the Mater Dolorosa property is also not unique for its architectural style. While it could be argued that the Master Dolorosa was one of the more notable properties designed by J.A. McNeil Company, the Mater Dolorosa Retreat Center building's 1985 addition and the 1966 and 2002 renovations to the Chapel's interior have significantly diminished the property's ability to serve as a good representation of J.A. McNeil Company's work.

In addition to the J.A. McNeil Company, buildings and structures on the property were also designed and built by local builder and stone mason William J. Schiltz. While the most notable element of the property constructed by Schiltz was the no longer extant Monastery building, the Stations of the Cross structures were also designed by Schiltz. Despite the incredible workmanship and material sourcing, Schiltz is not considered a master architect or builder. Schiltz is best known for his involvement with local Sierra Madre politics, serving two terms as mayor and as a city councilman. No other buildings on the property were built by master builders or architects.

In addition to the existing buildings and structures on the property, there are notable decorative elements on the property that were also researched and evaluated for significance. Specifically, the stained glass windows of the Chapel that utilize chipped glass from Judson Studios, master artisans. The windows were created after the death of William Lees Judson, but during the post-World War II church construction boom in Southern California that allowed the studio to resume work. While these windows do possess high artistic value on their own, multiple alterations to the Chapel interior have altered the way they are viewed and experienced, diminishing the integrity of design, feeling, and association necessary to convey significance under this criteria. Similarly, the Stations of the Cross shrines may once have had high artistic value, but this has been diminished by alterations. The Stations of the Cross are incredible examples of fine stone working and material sourcing, but renovations in the 2010s altered the way they are experienced and their locations. These alterations diminish the level of design and location integrity necessary to convey significance under these criteria.

The Mater Dolorosa Retreat Center also lacks the integrity to convey significance as a representative of a significant and distinguishable entity whose components may lack individual distinction, and would likely not meet the threshold necessary to be a contributor to such a group or district.

In summary, while the Mater Dolorosa Retreat Center's components do possess architectural merit due to association with a master builder (J.A. McNeil Company) and master artisans (Judson Studios), as well as possessing high artistic value in the stained glass windows from Judson Studios, alterations have diminished the property's historical association, design, and location integrity to the point where they can no longer convey significance. The property components, both individually and as a whole lack the integrity necessary to convey significance under these criteria. For these reasons, Mater Dolorosa Retreat Center does not appear eligible for listing in the CRHR under Criterion 3.

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history.

The property is not significant under Criterion 4 of the CRHR as a source, or likely source, of important historical information nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

City of Sierra Madre Statement of Significance

The City of Sierra Madre's landmark designation criteria is based on the NRHP/CRHR designation criteria and integrity requirements and are outlined below. The Mater Dolorosa Retreat Center does not meet any of the criteria for listing as a City of Sierra Madre Landmark.

A. Historic. It was the site of, or is associated with local, state or national cultural, social, economic, political or natural history, events or persons significant to the history of Sierra Madre, or it reflects significant geographical patterns, including those associated with different eras of settlement and growth, particular transportation modes, or distinctive examples of park or community planning.

As described in Criteria A/1 and B/2, the Monastery building, which was significant for its connection to the outreach of Passionists into the American West in the 1920s was razed after an earthquake in 1993. Without the Monastery building, the property no longer retains the original design elements that associated to this period of expansion. Further, the Mater Dolorosa Retreat Center has not had a measurable effect on the history of the City of Sierra Madre and is not associated with cultural, social, economic, political or natural history, events or persons significant to the history of Sierra Madre. Therefore, the Mater Dolorosa Retreat Center, which includes the project site, is not eligible as a City of Sierra Madre Landmark under Criterion A.

B. Architectural. It is representative of the work or is one of a few remaining examples of a notable builder, designer or architect, or, it embodies distinctive characteristics of a style, type, period or method of construction, or, is a valuable example of architectural achievement or innovation such as the use of indigenous materials or craftsmanship.

As described in Criteria C/3, while the Mater Dolorosa Retreat Center building was built by master builder J.A. McNeil Company, it is not representative or unique among their body of work, and is one of several religious institutional buildings built by them during this period. Additionally, the Mater Dolorosa Retreat Center Chapel includes stained glass from master artisans Judson Studios. However, alterations to the chapel's interior and orientation have diminished the design integrity of these windows. Without the original 1931 Monastery building, now demolished, the Mater Dolorosa Retreat Center property does not embody the distinctive elements of the Spanish Colonial Revival style and is not a valuable or innovative architectural achievement. Overall, the property lacks the necessary integrity to convey significance under this criterion. Therefore, the Mater Dolorosa Retreat Center, which includes the project site, is not eligible as a City of Sierra Madre Landmark under Criterion B.

Integrity Discussion

In addition to meeting one or more of the previous criteria, an eligible resource must retain integrity, which is expressed in seven aspects: location, setting, design, workmanship, materials, feeling, and association. All properties change over the course of time. Consequently, it is not necessary for a property to retain all its historic physical features or characteristics. The property must retain, however, the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define both why a property is significant and when it was significant. The following sections discuss the integrity of the Mater Dolorosa Retreat Center property. Taken as a whole, the property's integrity does not rise to the level needed to convey significance under any CRHR or City of Sierra Madre Landmark designation criteria.

Location: Most buildings at the Mater Dolorosa Retreat Center property retain integrity of location. However, the Stations of the Cross shrines were moved from their historical locations during the remodeling in 2015. Other additions, such as the Garden of the Seven Sorrows, Sacred Heart Plaza, Amphitheater and Garden of Gethsemane replaced historical buildings or gardens, further diminishing the overall integrity of location at the property. The total property acreage has only been diminished a few times over its occupancy, so overall, the property is the same size and orientation relative to the City and the mountains.

Setting: Although the original 1931 Monastery building was razed and newer features have been added to the property in the recent past that have changed the original design and layout, the isolated nature of the Mater Dolorosa Retreat Center, separated from the surrounding neighborhood, outdoor garden walks, the mature olive groves, and backdrop of the San Gabriel Mountains have been retained and the building maintains a high level of integrity of setting.

Design: The Mater Dolorosa Retreat Center building does not retain integrity of design due to multiple renovations and a large and very visible addition in 1985. In addition to the highly visible addition, the Chapel interior was also altered and renovated several times, disregarding the original interior layout and orientation, and reversing vestibule and sacristy to its current orientation in 2002. Similarly, the Staff House has had multiple alterations and additions, diminishing its integrity of design. The remaining buildings at the site have also had additions or small changes to aspects of design. Therefore, the Mater Dolorosa Retreat Center property does not retain integrity of design.

Materials: The Mater Dolorosa Retreat Center and Staff house do not retain integrity of materials and workmanship due to significant alterations and additions, and the addition of modern materials. The Stations of the Cross retain integrity of materials since it appears as though original materials have been retained or are replaced with in-kind materials as needed.

Workmanship: For the most part, integrity of workmanship has been retained at all buildings, except where modern additions obscure and detract from the original workmanship. The Stations of the Cross structures still convey a high level of workmanship integrity, as the individually sourced stones and original bas-relief sculptures and designs have been retained. Similarly, the Judson Studios chipped glass-style stained glass windows in the Chapel convey a high level of workmanship, but alterations to the design of the chapel interior and multiple renovations diminish integrity of workmanship below the threshold necessary for significance.

Feeling: The buildings, with the exception of the Staff House, do not feel as though they were developed in the 1950s, as they were styled to match the Spanish Colonial Revival style architecture of the original 1931 Monastery building. Therefore, the property does not successfully convey a feeling of being developed in the 1950s. The whole property, however, with both its buildings and gardens, retains an environment conducive to silence and contemplation, so the original feeling of isolations intended by the founders is retained.

Association: The Mater Dolorosa Retreat Center building no longer retains its association with master builder J.A. McNeil Company and master artisan Judson Studios due to multiple interior and exterior alterations, but does retain association with its original occupants, the Passionists brothers and priests who ran the Mater Dolorosa Retreat Center. Archival research did not uncover historical associations for the remaining buildings and structures at the site.

While most elements of integrity are represented at the site, when taken as a whole, the property's overall integrity does not rise to the level needed to convey significance for NRHP, CRHR or a City of Sierra Madre Landmark designation.

Conclusion

As discussed in Section 4.5.1, no historical resources were identified within the project site as a result of the CHRIS records search, extensive archival research, field survey, or property significance evaluation. Therefore, the project would not result in a substantial adverse change in the significance of a historical resource pursuant to §15064.5. Although the proposed project is located outside of the Mater Dolorosa Retreat Center boundary, it is located adjacent to the Retreat Center and located on the same parcel as the Retreat Center, which is currently split within three different lots (a lot line adjustment would be processed to consolidate the two southern lots that make up the project site into one and adjust the site's northern boundary further to the north) . Therefore, a historical evaluation of the Mater Dolorosa Retreat Center was conservatively provided as the project site is associated with the larger institutional property. As discussed previously, the Mater Dolorosa Retreat Center does not appear eligible for listing in the CRHR, or as a City of Sierra Madre Landmark under any designation criteria, due to significant alterations that have compromised the integrity of the property as a whole. As such, the Mater

Dolorosa Retreat Center is not considered an historical resource for the purposes of CEQA. Implementation of the proposed project would have no physical impact on the adjacent Mater Dolorosa Retreat Center. In addition, development of the 17.30-acre project site directly adjacent to the Mater Dolorosa Retreat Center would have no impacts in terms of affecting its setting or cultural context. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. Impacts would be **less than significant**.

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

No archaeological resources were identified within the project site through the CHRIS records search, archival review, or NAHC SLF search. As discussed in Section 4.5.1.2.1, Background Research, two historic-period sites were identified within 1 mile of the project site. However, no previously recorded archaeological resources were identified on the project site.

The project site has been subject to consistent ground disturbance as a result of agricultural use of the site, site maintenance activities, and activities associated with the Mater Dolorosa Retreat Center and the former Monastery. Considering these factors, the potential for buried archaeological deposits, specifically historic-era deposits within the project site is considered to be relatively low, but possible. However, at depth, ground disturbing activities associated with construction of the proposed project could result in the unanticipated discovery of previously uncovered archaeological resources. As such, impacts to previously undiscovered archaeological resources would be **potentially significant** (**Impact CUL-1**). In order to mitigate any potential impacts to cultural resources resulting from ground disturbing activities, three mitigation measures shall be implemented. **MM-CUL-1** would educate all personnel involved in ground disturbing activities to be sensitive to the potential presence and discovery of cultural resources, **MM-CUL-2** provides for a qualified archaeologist to be retained on call to respond to the inadvertent discovery of cultural resources and **MM-CUL-3** sets forth the measures that shall be implemented if archaeological resources are discovered (see Section 4.5.6). Implementation of these measures would reduce potential impacts to **less than significant.**

3. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

No evidence of human remains, including those interred outside of formal cemeteries, was discovered during the records search, background research, or field survey. Further, the site has been previously disturbed and never used as a formal cemetery. However, the possibility exists that human remains may be discovered during ground disturbing activities associated with project construction. Any disturbance of human remains that may occur during project construction would be potentially significant. Therefore, impacts to human remains would be **potentially significant** (**Impact CUL-2**). Should human remains be discovered, implementation of **MM-CUL-4** (outlined in Section 4.5.6) would reduce impacts to **less than significant.**

4.5.6 Mitigation Measures

The following mitigation measures would be implemented to reduce **potentially significant** impacts to previously uncovered archaeological resources **(Impact CUL-1)** and previously unrecorded human remains **(Impact CUL-2)** on project site during ground disturbing activities associated with project construction.

MM-CUL-1 **Workers Environmental Awareness Program.** All construction personnel and monitors who are not trained archaeologists shall be briefed regarding unanticipated discoveries prior to the start of ground disturbing activities. A basic presentation shall be prepared and presented by a qualified archaeologist to inform all personnel working on the project about the archaeological sensitivity of

the area. The purpose of the WEAP training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also be instructed on the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the on-call archaeologist and if appropriate, Tribal representative. Necessity of training attendance should be stated on all project site plans intended for use by those conducting the ground disturbing activities.

MM-CUL-2 **On-Call Archaeological Construction Monitoring.** A qualified archaeologist shall be retained and on-call to respond and address any inadvertent discoveries identified during ground disturbing activities. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust all monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material as well as determine, for purposes of Native American monitoring, when initial ground disturbing activities are complete. The archaeological monitor shall be responsible for maintaining daily monitoring logs for those days monitoring is required. If monitoring is ultimately required, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance. This report shall document compliance with approved mitigation and all monitoring efforts as well as include an appendix with copies of all daily monitoring logs. The final report shall be submitted to the South Central Coastal Information Center (SCCIC).

MM-CUL-3 **Unanticipated Discovery of Archaeological Resources.** In the event that potential archaeological resources (sites, features, or artifacts) are exposed during construction activities involving ground disturbance for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist can evaluate the significance of the find and determine whether additional study is warranted. This avoidance buffer may be adjusted following inspection of this area by the qualified archaeologist. Depending upon the significance of the find under CEQA (14 CCR 15064.5[f]; PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

MM-CUL-4 **Unanticipated Discovery of Human Remains.** In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete his/her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

4.5.7 Level of Significance After Mitigation

Implementation of **MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3** would reduce potentially significant impacts to previously undiscovered archaeological resources (**Impact CUL-1**) to a **less than significant** level through development of a WEAP and protocols for the unanticipated discovery of archaeological resources as well as a condition requiring a qualified archaeologist be on-call to respond in the case there is an unanticipated discovery of archaeological resources. Additionally, implementation of **MM-CUL-4** would reduce potentially significant impacts to human remains (**Impact CUL-2**) to a **less than significant** level through compliance with Section 7050.5 of the California Health and Safety Code regarding the handling of human remains. Finally, impacts to historical resources would be **less than significant** and no mitigation would be required.

SOURCE: Los Angeles County 2020; Bing Maps

DUDEK

0 40 80 Meters
0 125 250 Feet

FIGURE 4.5-1

Site Map

The Meadows at Bailey Canyon EIR

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4.6 Energy

This section describes the existing energy conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.6.1 Existing Conditions

Project Site and Vicinity

Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 255,224 gigawatt hours of electricity in 2018 (EIA 2020a). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Because of the state's energy efficiency standards and efficiency and conservation programs, California's per-capita energy use has remained stable for more than 30 years, while the national average has steadily increased (CEC 2018a).

Electrical service in the City of Sierra Madre (City) is provided by the Clean Power Alliance. As of October 2020, Sierra Madre residents and businesses are receiving 100% Green Power (100% renewable energy) as their default rate product. The Sierra Madre City Council voted in February 2020 to adopt Clean Power Alliance's 100% Green Power as the default rate to meet the community's climate and environmental protection goals. Customers also have the option to purchase the Lean Power rate which is 36% renewable energy and Clean Power rate which is 50% renewable energy (Clean Power Alliance 2020).

Natural Gas

One-third of energy commodities consumed in California is natural gas and mainly falls into four sectors: residential, commercial, industrial, and electric power generation. In addition, natural gas is a viable alternative to petroleum for use in cars, trucks, and buses (CEC 2017). According to the EIA, California used approximately 2,154,030 million cubic feet of natural gas in 2019 (EIA 2020c). The majority of California's natural gas customers are residential and small commercial customers (core customers), which accounted for approximately 35% of the natural gas delivered by California utilities in 2018 (CPUC 2020). Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 65% of the natural gas delivered by California utilities (CPUC 2020).

Petroleum

According to the EIA, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2020d). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.7 billion gallons of petroleum. By sector, transportation uses utilize approximately 85.5% of the state's petroleum, followed by 11.1% from industrial, 2.5% from commercial, 0.9% from residential, and 0.01% from electric power uses (EIA 2020b). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources.

California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 4.6.2, Relevant Plans, Policies, and Ordinances.

4.6.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards. In 2010, fuel economy standards were set at 27.5 miles per gallon (mpg) for new passenger cars and 23.5 mpg for new light trucks. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national greenhouse gas (GHG) emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and NHTSA Joint Rule for Vehicle Standards

On April 1, 2010, the Environmental Protection Agency (EPA) and NHTSA announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule is intended to reduce GHG emissions and improve fuel economy. The EPA promulgated the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA promulgated Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (EPA 2010). This final rule follows the EPA and Department of Transportation's joint proposal on September 15, 2009, and is the result of the President Obama's May 2009 announcement of a national program to reduce GHGs and improve fuel economy. The final rule became effective on July 6, 2010 (EPA and NHTSA 2010).

The EPA GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO_2) per mile in model year 2016, equivalent to 35.5 mpg if the automotive industry were to meet this CO_2 level through fuel economy improvements alone. CAFE standards for passenger cars and light trucks will be phased in between 2012 and 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. Together, these standards will cut GHG emissions by an estimated 960 million metric

tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA and NHTSA 2010).

In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (EPA and NHTSA 2012). These standards will reduce motor vehicle GHG emissions to 163 grams of CO_2 per mile, which is equivalent to 54.5 mpg if this level were achieved solely through improvements in fuel efficiency for cars and light-duty trucks by model year 2025. A portion of these improvements, however, will likely be made through improvements in air-conditioning leakage and through use of alternative refrigerants, which would not contribute to fuel economy. The first phase of the CAFE standards (for model years 2017 to 2021) are projected to require, on an average industry fleet-wide basis, a range from 40.3 to 41.0 mpg in model year 2021. The second phase of the CAFE program (for model years 2022 to 2025) is projected to require, on an average industry fleet-wide basis, a range from 48.7 to 49.7 mpg in model year 2025. The second phase of standards has not been finalized due to the statutory requirement that NHTSA set average fuel economy standards not more than 5 model years at a time. The regulations also include targeted incentives to encourage early adoption and introduction into the marketplace of advanced technologies to dramatically improve vehicle performance, including the following:

- Incentives for electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles
- Incentives for hybrid technologies for large pickups and for other technologies that achieve high fuel economy levels on large pickups
- Incentives for natural gas vehicles
- Credits for technologies with potential to achieve real-world GHG reductions and fuel economy improvements that are not captured by the standards' test procedures

State

California Environmental Quality Act

Per Appendix F of the California Environmental Quality Act (CEQA), the goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: (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. In order to assure that energy implications are considered in project decisions, the CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100[b][3]). Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, cost effectiveness may be determined more by energy efficiency than by initial dollar costs. A lead agency may consider the extent to which an energy source serving the project has already undergone environmental review that adequately analyzed and mitigated the effects of energy production.

Protection of Underground Infrastructure

California Government Code Section 4216 et seq. requires any entity performing excavating to contact a regional notification center (e.g., Underground Service Alert or Dig Alert) at least 2 days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert Southern California, the regional notification center for Southern California. Underground

Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities, once notified, are required to mark the specific locations of their facilities within the work area prior to the start of project activities.

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every three years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2016 Title 24 building energy efficiency standards, which became effective January 1, 2017, will further reduce energy used and associated GHG emissions. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2016).

The 2019 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2020. The 2019 Title 24 Building Energy Efficiency Standards will further reduce energy used and associated GHG emissions compared to prior standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018b). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings and schools and hospitals. The CALGreen 2016 standards will become effective January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance

- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements; stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 75% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission, CEC, and California Air Resources Board (CARB) also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. The key policy timelines include: (1) all new residential construction in California will be ZNE by 2020 and (2) all new commercial construction in California will be ZNE by 2030.[1]

Assembly Bill 1493

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill (AB) 1493 (Pavley) was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Renewable Energy Sources

Established in 2002 under Senate Bill (SB) 1078, and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33% of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 renewable portfolio standard (RPS) to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal, landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multifuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy

[1] See, e.g., CPUC, California's Zero Net Energy Policies and Initiatives, September 18, 2013. http://www.cpuc.ca.gov/NR/rdonlyres/C27FC108-A1FD-4D67-AA59- 7EA82011B257/0/3.pdf. It is expected that achievement of the zero net energy goal will occur via revisions to the Title 24 standards.

efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

Local

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated Metropolitan Planning Organization for the Southern California region and is the largest Metropolitan Planning Organization in the United States. With respect to air quality planning, GHG emissions, and other regional issues, SCAG has prepared the 2016 RTP/SCS (SCAG 2016). Specifically, the 2016 RTP/SCS links the goals of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. See Section 4.3, Air Quality, for additional discussion on SCAG.

City of Sierra Madre General Plan

The City's General Plan (City of Sierra Madre 2015) includes the goals and policies that result in co-benefits with reducing energy, result in benefits with reducing energy use, and that are related to sustainable construction techniques. These applicable issues and policies are outlined below. The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Policy 5.2: Promote the use of sustainable construction techniques and environmentally sensitive design for housing.

Policy L51.5 Encourage and support the use of non-automotive travel throughout the City.

Policy L51.7 Utilize non-automotive transportation solutions as a tool to further goals related to environmental sustainability and economic development.

4.6.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to energy are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to energy would occur if the project would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.6.4 Project Design Features

There are no project design features that apply to energy.

4.6.5 Impacts Analysis

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

The proposed project includes adoption of the Specific Plan that would establish the zoning and development standards to guide future development of single-family residential uses on approximately 9.19 acres of the 17.30 acre project site, and 3.39 acres of open space (including a 3.04-acre neighborhood public park). The impacts to energy associated with construction and operation of the future development under the Specific Plan are described below.

Construction

Electricity

Temporary electric power for as-necessary construction lighting and electronic equipment such as computers inside temporary construction trailers would be provided by the Clean Power Alliance. The electricity used for such activities would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the Petroleum subsection. Any minor amounts of natural gas that may be consumed as a result of project construction would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Petroleum

Heavy-duty construction equipment associated with construction activities would rely on diesel fuel, as would haul trucks involved in removing the materials from demolition and excavation. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. Appendix B lists the assumed equipment usage for each phase of construction.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Construction is estimated to occur in the years 2024–2025 based on the construction phasing schedule. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2020). The estimated diesel fuel usage from construction equipment is shown in Table 4.6-1.

Table 4.6-1. Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
Clear and Grub	3	1.65	10.21	161.63
Remedial & Mass Excavation	11	127.89	10.21	12,525.60
Import Material to Balance Site	1	3.85	10.21	376.61
Finish Grading	3	16.64	10.21	1,629.68
Building Construction	9	372.71	10.21	36,504.87
Wet Utilities	7	90.23	10.21	8,837.35
Dry Utilities	4	24.69	10.21	2,418.42
Surface Improvements	9	62.85	10.21	6,156.04
Architectural Coating	1	3.40	10.21	333.43
			Total	60,035.73

Sources: Pieces of equipment and equipment CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Fuel consumption from worker and vendor trips are estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline and vendor/hauling vehicles are assumed to be diesel.

Calculations for total worker, vendor, and haul truck fuel consumption are provided in Tables 4.6-2, 4.6-3, and 4.6-4.

Table 4.6-2. Construction Worker Gasoline Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/ Gallon	Gallons
Clear and Grub	28	0.12	8.78	13.68
Remedial & Mass Excavation	720	3.09	8.78	351.73
Import Material to Balance Site	84	0.36	8.78	41.04
Finish Grading	204	0.88	8.78	99.66
Building Construction	42,600	180.51	8.78	20,559.60
Wet Utilities	3,000	12.87	8.78	1,465.57
Dry Utilities	780	3.35	8.78	381.05
Surface Improvements	660	2.83	8.78	322.43
Architectural Coating	560	2.31	8.78	262.79
			Total	22,531.28

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

Table 4.6-3. Construction Vendor Diesel Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/ Gallon	Gallons
Clear and Grub	4	0.05	10.21	4.58
Remedial & Mass Excavation	80	0.94	10.21	91.63
Import Material to Balance Site	28	0.33	10.21	32.07
Finish Grading	34	0.40	10.21	38.94
Building Construction	16,200	189.11	10.21	18,522.16

Table 4.6-3. Construction Vendor Diesel Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/ Gallon	Gallons
Wet Utilities	240	2.81	10.21	274.88
Dry Utilities	120	1.40	10.21	137.43
Surface Improvements	2,700	31.57	10.21	3,092.35
Architectural Coating	40	0.47	10.21	45.55
			Total	**18,964.26**

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

Table 4.6-4. Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Clear and Grub	0	0.00	10.21	0.00
Remedial & Mass Excavation	0	0.00	10.21	0.00
Import Material to Balance Site	504	17.79	10.21	1,742.68
Finish Grading	0	0.00	10.21	0.00
Building Construction	0	0.00	10.21	0.00
Wet Utilities	0	0.00	10.21	0.00
Dry Utilities	0	0.00	10.21	0.00
Surface Improvements	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
			Total	**1,742.68**

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

In summary, construction of the project is conservatively anticipated to consume 22,531 gallons of gasoline and 80,743 gallons of diesel, which would last approximately 16 months. Based on these assumptions, approximately 18.6 billion gallons of petroleum would be consumed in California over the course of the project's construction phase based on the California daily petroleum consumption estimate of approximately 78.4 million gallons per day (EIA 2020d). By comparison, Countywide total petroleum use by vehicles is expected to be 4 billion gallons per year by 2024 (CARB 2020).

The project will be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology (BACT) requirements. The project is also located in an urban area and worker, vendor, and haul truck trip lengths would be shorter compared to a suburban project location, resulting in less energy use. Finally, as described in Section 4.3.3.1.1, the project will utilize construction equipment that meets or exceeds the EPA Tier 4 Interim emission standard in accordance with mitigation measure MM-AQ-1.

Summary

The electricity and natural gas used for construction of the project would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption. Construction is anticipated to consume 22,531 gallons of gasoline and 80,743 gallons of diesel. The project would be built in accordance with applicable green building standards (Title 24, CalGREEN) and make use of a clean construction fleet. Therefore, impacts to energy resources during construction would be **less than significant**.

Operation

Electricity

The operation of the project buildout would require electricity for multiple purposes, including cooling, lighting, appliances, and various equipment. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. Electricity consumption associated with project operation is based on the California Emissions Estimator Model (CalEEMod) outputs presented in Appendix B.

CalEEMod default values for energy consumption for each land use were applied for the project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings (both natural gas and electricity) is divided by the program into end use categories subject to Title 24 requirements (end uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The most recent amendments to Title 24, Part 6, referred to as the 2019 standards, became effective on January 1, 2020. According to these estimations, the proposed project would consume approximately 344,748 kWh per year during operation (Appendix B). The residential electricity demand in 2019 was 19,562,554,839 kWh (9,563 GWh) for the County (CEC 2020a). As such, the project would have a negligible impact on demand for the County and the Clean Power Alliance.

Natural Gas

The operation would require natural gas for various purposes, including water heating and natural gas appliances. Natural gas consumption associated with operation is based on the CalEEMod outputs presented in Appendix B.

CalEEMod default values for energy consumption for each land use were applied for the project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. The program uses data collected during the Residential Appliance Saturation Survey to develop energy intensity values (electricity and natural gas usage per square foot per year) for residential buildings. Energy use in buildings (both natural gas and electricity) is divided by the program into end use categories subject to Title 24 requirements (end uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The most recent amendments to Title 24, Part 6, referred to as the 2019 standards, became effective on January 1, 2020. According to these estimations, the proposed project would consume approximately 1,153,930 kilo-British Thermal Units (kBtu) per year. The residential natural gas consumption in 2019 was 123,572,924,500 kBtu for the County (CEC 2020b).

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site, as well as fuels used for alternative modes of transportation that may be used by residents.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the vehicle miles traveled (VMT) as a result of project operation. As shown in Appendix B (CalEEMod outputs are discussed in Section 4.3, Air Quality, and Section 4.8, Greenhouse Gas Emissions), the annual VMT attributable to the proposed project is expected to be 1,358,074 VMT. Countywide, the annual VMT is estimated to be 101,174,849,833 per year in 2026 (CARB 2020). Similar to the construction worker and vendor trips, fuel consumption from worker and vendor trips are estimated by converting the total CO_2 emissions from operation of the project to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Based on the annual fleet mix provided in CalEEMod, 93.3% of the fleet range from light-duty to medium-duty vehicles and motorcycles are assumed to run on gasoline. The remaining 6.6% of vehicles represent medium-heavy duty to heavy-duty vehicles and buses and are assumed to run on diesel. Calculations for annual mobile source fuel consumption are provided in Table 4.6-5.

Table 4.6-5. Annual Mobile Source Petroleum Demand

Fuel	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Gasoline	468.98	8.78	53,415.14
Diesel	38.13	10.21	3,734.40
		Total	**57,149.54**

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram

As shown in Table 4.6-5, the annual petroleum consumption for the project is estimated to be 57,150 gallons per year. By comparison, California as a whole consumes approximately 28.7 billion gallons of petroleum per year (EIA 2020d). Countywide total petroleum use by vehicles is expected to be 3.8 billion gallons per year by 2026 (CARB 2020).

Summary

Statewide emission reduction measures proposed in the CARB-adopted amendments to the Pavley regulations include measures aimed at reducing GHG emissions associated with transportation. These amendments are part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. Pavley regulations reduced GHG emissions from California passenger vehicles by about 22% in 2012, compared to the baseline without the regulations. It is expected that Pavley regulations will reduce GHG emissions from California passenger vehicles by about 30% in 2016, all the while improving fuel efficiency and reducing motorists' costs. As such, vehicle trips associated with the project are expected to use less petroleum due to advances in fuel economy over time.

CARB has adopted a new approach to passenger vehicles (cars and light trucks) by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2017).

The proposed project would create additional electricity and natural gas demand by constructing new residences. New facilities associated with the proposed project would be subject to the State Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations. The efficiency standards apply to new construction of nonresidential buildings and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

Although the project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in VMT over time. Therefore, impacts to energy resources during operation would be **less than significant**.

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

Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. The proposed project would comply with Title 24, Part 6, per state regulations. In accordance with Title 24 Part 6, the proposed project would have: (a) sensor-based lighting controls—for fixtures located near windows, the lighting would be adjusted by taking advantage of available natural light; and, (b) efficient process equipment—improved technology offers significant savings through more efficient processing equipment.

Title 24, Part 11, contains voluntary and mandatory energy measures that are applicable to the proposed project under the CALGreen Code. As discussed under Threshold 1, the proposed project would result in an increased demand for electricity, natural gas, and petroleum. In accordance with Title 24, Part 11, mandatory compliance, the applicant would have: (a) 50% of its construction and demolition waste diverted from landfills; (b) mandatory inspections of energy systems to ensure optimal working efficiency; (c) low pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards; and, (d) a 20% reduction in indoor water use. Compliance with all of these mandatory measures would decrease the consumption of electricity, natural gas, and petroleum.

Because the proposed project would comply with Title 24, Part 6 and Part 11, no conflict with existing energy standards and regulations would occur. Therefore, impacts would be **less than significant**.

4.6.6 Mitigation Measures

No mitigation is required for the project.

4.6.7 Level of Significance After Mitigation

Impacts would be **less than significant** without mitigation.

4.7 Geology and Soils

This section describes the existing geological conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. A geotechnical investigation that evaluated and identified potential geology and soil impacts associated with the project was prepared by Geo Soils Consultants in November 2020 and is included as Appendix E of this Environmental Impact Report (EIR).

4.7.1 Existing Conditions

Project Site and Vicinity

The project is located in the City of Sierra Madre (City), which is on the alluvial plain in the northwestern portion of the San Gabriel Valley. An alluvial plain is a deposit of sediment that gathers over time as it is deposited by a river or stream. The City's topography is characterized by broad, gentle foothill slopes within the southern portions of the City and steep hillsides and ridgeline-canyon terrain in the northern portion adjacent to the San Gabriel Mountains of the Angeles National Forest. The northern portion of the City, where the site is located, is an area where the alluvial plain meets the southern foothills of the San Gabriel Mountains.

Geologic Units

The geologic units within the City are of two distinct types. The southern portion of the City consists of Pleistocene deposits, which are deposits aged between 11,000 and 2.58 million years (Cohen et al. 2020). Geologic units mapped in the southern portion of the City include alluvial fan deposits, which are derived from the San Gabriel Mountains to the north. A majority of the developed areas within the City have been built atop these soils. Much of the alluvial sediment in the central and southern sections of the City is mapped as Quaternary young alluvial fan deposits consisting of gravel, sand, and silt, that are boulder characterized by Mesozoic plutonic rocks, which are igneous rocks and associated metamorphic rocks that formed at great depth. The Mesozoic era extends from approximately 66 to 252 million years ago (Cohen et al. 2020). These rocks are typically very hard and exhibit high amounts of fracturing in areas close to active faults (City of Sierra Madre 2015).

Within the project site, soils consist of Holocene alluvium soils, located within the northwestern portion of the site, as well as Pleistocene alluvial deposits, located in the eastern and southern portions of the site. Artificial fill and terrace deposits underlie the project site and can be located from 5 to 18 feet below ground surface (bgs). However, the upper 5 to 7 feet of soil are looser than the underlying soil. Artificial fill present on site consists of brown, silty, very fine sands and fine to coarse sands that are dry to damp, and loose to medium dense. Artificial fill is unsuitable for structural support. Terrace deposits present on site extend to a maximum depth of 30 feet, and consist of reddish brown, silty/clayey, fine to coarse sands with gravels that were damp to moist, and are medium to very dense. These deposits were derived from runoff of the San Gabriel Mountains, located to the north of the site (Appendix E).

Liquefaction

Liquefaction refers to loose, saturated sand or silt deposits that behave as a liquid and lose their load-supporting capability when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. The City has one liquefaction hazard zone in and near Little Santa Anita Canyon in the northeastern part of the City. The project site is located outside of this liquefaction zone (City of Sierra Madre

2015). Lastly, groundwater was identified on site at depths of 100 feet bgs; thus, potential for liquefaction at the project site is considered low (Appendix E)

Landslides

Landslides are another natural disaster risk relevant to the southern foothills of the San Gabriel Mountains that lie within the northern boundary of the City, approximately 460 feet north of the site. Landslides in the City typically occur at elevations of between 1,400 and 2,000 feet, well above the urban area of the City. Historically, two major landslides have occurred in the northern hillside areas of the City. The project site is located outside of any potential landslide zone (City of Sierra Madre 2015).

Faulting and Seismicity

Southern California has many earthquakes because it straddles the boundary between the North American and Pacific tectonic plates, and fault rupture often results from their motion. There are many active and potentially active faults within or in the vicinity of the City. The nearest fault is the Sierra Madre Fault, located approximately 700 feet north of the project site, which passes through the northern part of the City along the base of the San Gabriel Mountains in a west-northwesterly direction. In addition, the Raymond Fault is located approximately 2 miles south of the project site. This fault consists of several sub parallel branches found at the base of the mountains and within the 0.25 miles of slope above the mountain base (Appendix E).

Although the Sierra Madre and Raymond Faults are the primary faults that pose a hazard to the City, earthquakes occurring on other regional faults could also cause considerable damage. Other notable faults in the region include the San Andreas (approximately 27 miles northeast of the project site), Newport Inglewood (approximately 21 miles the southwest of the project site), Palos Verdes (approximately 30 miles southwest of the project site), and Malibu Coast Faults (approximately 43 miles west of the project site), all of which are considered to be active. An earthquake along any of these faults would represent a hazard on the region, potentially causing many deaths and injuries, along with extensive property damage (City of Sierra Madre 2015).

Expansive Soils

Expansive soils shrink or swell as the moisture content decreases or increases; the shrinking or swelling can shift, crack, or break structures built on such soils. As described in the geotechnical investigation, soils on the project site have a low expansion potential (Appendix E).

Hydroconsolidation

The results of the borings excavated on the project site and laboratory testing on samples retrieved from the borings indicated that the upper seven feet of terrace deposits on the site are subject to hydroconsolidation, most commonly referred to as soil collapse (Appendix E).

Paleontological Resources

According to the City's General Plan, no paleontological resources have been identified within the City (City of Sierra Madre 2015). In addition, a records search was completed for the proposed project by the Natural History Museum of Los Angeles County (LACM), on December 4, 2020. Per the records search, no fossils are recorded within the project site, although fossil localities are documented nearby from sedimentary deposits that are similar to those underlying the project site (LACM 2020).

4.7.2 Relevant Plans, Policies, and Ordinances

Federal

International Building Code

The International Building Code (IBC) is a model building code developed by the International Code Council that provides the basis for the California Building Code (CBC). The purpose of the IBC is to provide minimum standards for building construction to ensure public safety, health, and welfare. Prior to the creation of the IBC, several different building codes were used; however, by 2000, the IBC had replaced these previous codes. The IBC is updated every 3 years.

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration's Excavation and Trenching standard, Title 29 of the Code of Federal Regulations, Part 1926.650, covers requirements for excavation and trenching operations. The Occupational Safety and Health Administration requires that all excavations where employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (California Public Resources Code Sections 2621–2630) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. The act helps define areas where fault rupture is most likely to occur. The act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active. Late Quaternary and Quaternary age faults are considered potentially active and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be sufficiently active and well defined by detailed site-specific geologic explorations to determine whether building setbacks should be established. Cities and counties affected by the zones must regulate certain development projects within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

California Building Code

State regulations protecting structures from geo-seismic hazards are contained in the California Code of Regulations, Title 24, Part 2 (the California Building Code [CBC]). The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The CBC is based on the International Building Code published by the International Code Conference. The CBC contains California amendments based on the American Society of Civil Engineers Minimum Design Standards 7-05, which provides requirements for general structural design and includes means for determining earthquake loads and other loads (such as wind loads) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

California Environmental Quality Act

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state laws and regulations, notably, the California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 et seq.). The Society of Vertebrate Paleontology's (SPV) Society of *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* satisfies project requirements in accordance with CEQA and California Public Resources Code Section 5097.5 and also complies with guidelines and significance criteria specified by the Society of Vertebrate Paleontology (SVP 2010).

Paleontological resources are explicitly afforded protection by CEQA, specifically in Section VII(f) of CEQA Guidelines Appendix G, the Environmental Checklist Form, which addresses the potential for adverse impacts to "unique paleontological resource[s] or site[s] or unique geological feature[s]" (14 CCR §15000 et seq.). This provision covers fossils of signal importance—remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group—as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. Further, CEQA provides that, generally, a resource shall be considered "historically significant" if it has yielded or may be likely to yield information important in prehistory (14 CCR §15064.5 [a][3][D]). Paleontological resources would fall within this category.

California Geologic Survey

The California Geologic Survey (CGS) provides guidance with regard to seismic hazards. The CGS's Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California provides guidance for evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigation.

State Earthquake Protection Law

The State Earthquake Protection Law (California Health and Safety Code § 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in the CBC. The CBC requires a site-specific geotechnical study to address seismic issues and identify seismic factors that must be considered in structural design. Because the project site is not located within an Alquist–Priolo Earthquake Fault Zone (Appendix E), no special provisions would be required for project development related to fault rupture.

Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act of 1990 (SHMA) (California Public Resources Code § 2690 et seq.) directs the California Department of Conservation and CGS to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the SHMA is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards.

The SHMA provides a statewide seismic hazard mapping and technical advisory program to assist cities and counties in fulfilling their responsibilities for protecting public health and safety from the effects of strong ground shaking, liquefaction, landslides, other ground failure, and other seismic hazards caused by earthquakes. Mapping and other information generated pursuant to the SHMA is made available to local governments for planning and development purposes. The state requires local governments to incorporate site-specific geotechnical hazard investigations and associated hazard mitigation as part of the local construction permit approval process, and requires the agent for a property seller, or the seller if acting without an agent, to disclose to any prospective buyer if the property is located within a seismic hazard zone. The state geologist is responsible for compiling seismic hazard zone maps. The SHMA specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

Local

City of Sierra Madre Local Hazard Mitigation Plan

The City is in the process of preparing a Local Hazard Mitigation Plan (LHMP) and a draft was released for public review in February 2020. The LHMP includes a broad range of activities designed to protect homes, schools, public buildings, and critical facilities. The purpose of a LHMP is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the City. The LHMP includes risk assessment and mitigation strategies for hazards including earthquakes, flooding, windstorms, wildfires, landslides, and utility related events such as power outages.

City of Sierra Madre General Plan

The Hazard Prevention Element of the City's General Plan contains the following objectives potentially relevant to the project (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Objective Hz6: Addressing potential flooding and landslide hazards on public and private property.

Policy Hz6.2: Require that the landscape of open space areas provide the maximum permeable surface area to reduce site runoff, and prohibit the paving of a majority of these areas.

Objective Hz10: Assessing the viability of development based on seismic safety considerations.

Policy Hz10.2: Investigate the limitations on the location of new or altered residences and critical, sensitive and high occupancy facilities in areas near active faults, and consider conducting a comprehensive geologic investigation to show where active faults pose a hazard to structures.

Objective Hz11: Minimizing to the extent possible the loss of life, serious injuries, and major social and economic disruption caused by the collapse of or severe damage to vulnerable buildings in an earthquake.

Policy Hz 11.2: Encourage seismic review of buildings.

Objective Hz13.2: Adopt and maintain high standards for seismic performance of buildings, through prompt adoption and careful enforcement of the best available standards for seismic design.

City of Sierra Madre Municipal Code

The Sierra Madre Municipal Code has existing standards and regulations that mitigate potential seismic and geologic safety concerns related to new construction. The following is a description of the provisions of the Sierra Madre Municipal Code that are applicable to the General Plan Update and relevant to the project.

- Chapter 15.04 (Building Code and Permits). This Chapter adopts by reference the most recent (2019) California Building Code, with certain amendments.
- Chapter 15.06 (California Residential Code). This chapter adopts by reference the most recent (2019) California Residential Code, with certain amendments.

4.7.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to geology and soils are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to geology and soils would occur if the project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of as known fault. Refer to Division of Mines and Geology Special Publication 42.
    2. Strong seismic ground shaking.
    3. Seismic-related ground failure, including liquefaction.
    4. Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
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.
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.
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.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.7.4 Project Design Features

The following project design features (PDFs) would be implemented as part of the proposed project and would be applicable to geology and soils:

PDF-GEO-1 **Ground Shaking and Seismic Design Criteria.** During the design phase of the proposed development on site, the project shall comply with the Earthquake Design Regulations of Chapter 16, Section 1613 of the California Building Code (CBC) 2019. Based on the mapped values, the coefficients and factors apply to the lateral-force design for the proposed structures at the site are outlined in Appendix E, Geotechnical Investigation. Terrace deposits are at grade and Class D is recommended.

PDF-GEO-2 **Grading.** Grading of the site will consist of cut and fill operations to create building pads and associated streets. Grading shall involve the removal and recompaction or artificial fill and loose terrace deposits (see **MM-GEO-1**) in addition of mass-excavation of the project site. The following shall be incorporated during grading activities:

Monitoring: All earthwork, including clearing, site preparation, and fill replacement, shall be conducted with engineering control, under observation and testing by the geotechnical engineer and in accordance with the requirements of a site-specific geologic and geotechnical engineering report.

PDF-GEO-3 **Site Preparation.** The following shall be incorporated during site preparation activities:

- Existing Structure Location: The general contractor shall locate all surface and subsurface structure on the site or on the approved grading plan prior to preparing the ground.
- Existing Structural Removal: Any underground structures, including septic tanks, wells, pipelines, foundations, utilities, that have not been located prior to grading shall be removed or treated in a manner recommended by the Geotechnical Engineer.
- Clearing and Stripping: The construction areas shall be cleared and stripped of all vegetation, trees, bushes, sod, topsoil, artificial fill, debris, asphalt, concrete and other deleterious material prior to fill placement.
- Removals: Removals of suitable soil shall be performed on the site in accordance with the soils report.
- Subgrade Preparation: Subgrade for foundations, pavement areas, overexcavations, and for those areas receiving any additional fill be prepared by scarifying the upper 12 inches and moisture conditioning, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum. The scarified areas shall be compacted to at least 90 percent of the maximum laboratory density, as determined by ASTM D-1557-12 compaction method. All areas to receive fill should be observed by the Geotechnical Engineer prior to fill placement.
- Subgrade Inspection: Prior to placing fill, the ground surface to receive fill should be observed, tested, and approved by the Geotechnical Engineer.

PDF-GEO-4 **Fill Placement.**

- Laboratory Testing: Representative samples of materials to be utilized as compacted fill shall be analyzed in a laboratory to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material should be conducted.
- On-Site Fill Material: The on-site soils are adequate for re-use in controlled fills provided the soils do not contain any organic matter, debris, or any individual particles greater than 12 inches in diameter.
- Rock Fragments: Rock fragments less than 12 inches in diameter may be utilized in the fill, provided they are not placed in concentrated pockets, surrounded with fine grained material, and the distribution of the rocks is supervised by the Geotechnical Engineer. Any rock fragments over 6 inches should be kept below a depth of 5 feet. Rocks greater than 12 inches in diameter should be taken off-site, placed in fill areas designated as suitable for rock disposal, or placed in accordance with the recommendations of the Geotechnical Engineer.
- Subgrade Verification and Compaction Testing: Regardless of material or location, all fill material should be placed over properly compacted subgrades in accordance with the Site Preparation section of Appendix E, Geotechnical Investigation, of this EIR. The condition of all subgrades shall be verified by the Geotechnical Engineer before fill placement or earthwork grading begins. Earthwork monitoring and field density testing shall be performed during grading to provide a basis for opinions concerning the degree of soil compaction attained.
- Fill Placement: Approved on-site material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material should be moisture conditioned, as required to obtain at least optimum moisture, but not greater than

120 percent of optimum moisture content. The fill shall be placed and compacted in horizontal layers, unless otherwise recommended by the geotechnical engineer.

- Compaction Criteria - Shallow Fills: For fills less than 40 feet in vertical thickness, each layer shall be compacted to at least 90 percent of the maximum laboratory density for material used as determined by ASTM D-1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the fill material is in accordance with the requirements of the Geotechnical Engineer.
- Fill Material - Moisture Content: All fill material placed shall be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent. If excessive moisture in the fill results in failing results or an unacceptable pumping condition, then the fill shall be allowed to dry until the moisture content is within the necessary range to meet the required compaction requirements or reworked until acceptable conditions are obtained.
- Keying and Benching: All fills should be keyed and benched through all topsoil, slopewash, alluvium or colluvium or creep material, into sound terrace deposits or firm material where the slope receiving fill is steeper than 5:1 (Horizontal: Vertical) or as determined by geotechnical engineer. The standard acceptable bench height is four feet into suitable material. The key for side hill fills shall be a minimum of 15 feet within firm materials, with a minimum toe embankment of 2 feet into firm material, unless otherwise specified by the geotechnical engineer.
- Drainage Devices: Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, or with the recommendations of the Geotechnical Engineer and Engineering Geologist.
- Cut-Fill Transition: Where a cut-fill transition is present beneath planned structures, the cut area shall be overexcavated three feet below the bottom of proposed footings and the excavated material shall be replaced as compacted fill to reduce the transition condition. These guidelines shall also be followed in areas where lots are underlain by soils or rock with differential expansion potential and also for lots located above descending buttress and stabilization fills.

PDF-GEO-5 **Grading Control.** Grading control activities shall comply with the following:

- Grading Inspection: Earthwork monitoring and field density testing shall be performed by the Geotechnical Engineer during grading to provide a basis for opinions concerning the degree of soil compaction attained. The Contractor shall receive a copy of the geotechnical engineer's Daily Field Engineering Report, which shall indicate the results of field density tests for that day. Where failing tests occur or other field problems arise, the contractor shall be notified of such conditions by written communication from the geotechnical engineer in the form of a conference memorandum, to avoid any misunderstanding arising from oral communication.
- Subgrade Inspection: All processed ground to receive fill and overexcavations should be inspected and approved by the Geotechnical Engineer prior to placing any fill. The contractor should be responsible for notifying the geotechnical engineer when such areas are ready for inspection. Inspection of the subgrade may also be required by the controlling governmental agency within the respective jurisdictions.

- Subgrade Testing: Density tests shall also be made on the prepared subgrade to receive fill, as required by the Geotechnical Engineer.
- Density Testing Intervals: In general, density tests shall be conducted at minimum intervals of 2 feet of fill height or every 500 cubic yards. Due to the variability that can occur in fill placement and different fill material characteristics, a higher number of density tests may be warranted to verify that the required compaction is being achieved

PDF-GEO-6 **Cut Slopes.** Cut slope activities shall comply with the following:

- Gradient: All cut slopes shall be designed at a gradient of 2:1 or less.
- Observation: The Engineering Geologist shall observe all cut slopes excavated in rock, lithified or formation material at vertical intervals not exceeding ten feet.
- Change of Conditions: If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or faults planes, or areas of unstable material are encountered during grading, these conditions shall be analyzed by the engineering geologist and geotechnical engineer, and recommendations shall be made to treat these problems.
- Protection: Cut slopes that face in the same direction as the prevailing drainage shall be protected from slopewash by a non-erosive interceptor swale placed at the top of the slope.
- Criteria: Unless otherwise specified in the geotechnical and geological report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.
- Drainage Devices: Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the geotechnical engineer or engineering geologist.

PDF-GEO-7 **Fill Slopes.** Fill slopes activities shall comply with the following:

- Gradient: All fill slopes shall be designed at a gradient of 2:1 or less.
- Slope Face - Compaction Criteria: The contractor shall be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses and stabilization fills. This may be achieved by overbuilding the slope a minimum of five feet, and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction. If the method of achieving the required slope compaction selected by the contractor fails to produce the necessary results, the contractor should rework or rebuild such slopes until the required degree of compaction is obtained. Slope testing shall include testing the outer six inches to three feet of the slope face during and after placement of the fill. In addition, during grading, density tests will be taken periodically on the flat surface of the fill three to five feet horizontally from the face of the slope.
- Slope Face - Vegetation: All fill slopes shall be planted or protected from erosion by methods specified in the geotechnical report, or required by the controlling governmental agency.

PDF-GEO-8 **Utility Trenching and Backfill.** Utility trenching and backfill activities shall comply with the following:

- Utility Trenching: Open excavations and excavations that are shored shall conform to all applicable Federal, State and local regulations.
- Backfill Placement: Approved on-site or imported fill material shall be evenly placed, watered, processed, and compacted in controlled horizontal layers not exceeding eight inches in loose thickness, and each layer should be thoroughly compacted with approved equipment. All fill material shall be moisture conditioned, as required to obtain at least optimum moisture, but not greater than 120 percent of optimum moisture content. The fill shall be placed and compacted on a horizontal plane, unless otherwise recommended by the geotechnical engineer.
- Backfill Compaction Criteria: Each layer of utility trench backfill shall be compacted to at least 90 percent of the maximum laboratory density determined by ASTM D- 1557-12. The field density shall be determined by the ASTM D-1556-07 method or equivalent. Where moisture content of the fill or density testing yields compaction results less than 90 percent, additional compaction effort and/or moisture conditioning, as necessary, shall be performed, until the compaction criteria is reached.
- Exterior Trenches Adjacent to Footings: Exterior trenches, paralleling a footing and extending below a 1H:1V plane projected from the outside bottom edge of the footing, shall be compacted to 90 percent of the laboratory standard. Sand backfill, unless it is similar to the in-place fill, shall not be allowed in these trench backfill areas. Density testing, along with probing, should be accomplished to verify the desired results.
- Pipe Bedding: We recommend that a minimum of 6 inches of bedding material shall be placed in the bottom of the utility trench. All bedding materials shall extend at least 4 inches above the top of utilities which require protection during subsequent trench backfilling. All trenches shall be wide enough to allow for compaction around the haunches of the pipe.
- Groundwater Migration: Backfilled utility trenches may act as French drains to some extent, and considerable groundwater flow along utility bedding and backfill shall be expected. Wherever buried utilities, or structures which they may intersect, could be adversely affected by such drainage, provisions shall be made to collect groundwater migrating along the trench lines. These situations include where buried utilities enter buildings, particularly where they enter below grade mechanical rooms, and where buried utilities enter junction boxes or switching stations that are intended to remain dry. Measures that remedy this include, but are not limited to, placement of perforated drain pipes below and continuous with bedding materials, and placement of seepage barriers such as lean mix concrete or controlled density fill (CDF).

PDF-GEO-9 **Construction Considerations.** Construction activities shall comply with the following:

- Erosion Control: Erosion control measures, when necessary, shall be provided by the contractor during grading and prior to the completion and construction of permanent drainage controls.
- Compaction Equipment: It is also the contractor's responsibility to have suitable and sufficient compaction equipment on the project site to handle the amount of fill being placed and the type of fill material to be compacted. If necessary, excavation equipment shall be shut down to permit completion of compaction in accordance with the recommendations contained herein. Sufficient watering devices/equipment shall also be provided by the contractor to achieve optimum moisture content in the fill material.
- Final Grading Considerations: Care shall be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property.

PDF-GEO-10 **Temporary Excavations.** Where the necessary space is available, temporary unsurcharged embankments may be slope back without shoring. The slope should not be cut steeper than 5 feet and below at near vertical temporary gradient, and above 5 feet at a 1:1 temporary gradient. In areas where soils with little or no binder are encountered, shoring or flatter excavation slopes shall be made. The recommended temporary excavation slopes do not preclude local ravelling or sloughing. Where sloped embankments are used, the top of the slope should be barricaded to prevent equipment and heavy storage loads within five feet of the top of the slope. If the temporary construction embankments are to be maintained for long periods, berms should be constructed along the top of the slope to prevent runoff water from eroding the slope faces. The soils exposed in the temporary backcut slopes during excavation shall be observed by qualified personnel so that modifications of the slopes can be made if variations in the soil conditions occur. On-site grading should not undermine support of existing offsite improvements.

PDF-GEO-11 **Drainage/Landscape Maintenance.** The southern area of the site, where the proposed park would be located, may be used for stormwater infiltration. The site is underlain by mostly sandy soil, which have acceptable infiltration rates. However, additional subsurface exploration and infiltration testing shall be required in this area to determine the actual soil infiltration rates for design purposes of the system used. Any infiltration systems shall be setback a sufficient distance from proposed structures and adjacent properties to avoid adverse impacts. These distances shall be determined with future studies.

In areas of residential development, water shall not be allowed to pond or seep into the ground, or flow over slopes in a concentrated manner. Roof gutters and yard drains shall be provided. Pad drainage shall be directed toward the street or any approved watercourse area swale via non-erosive channel, pipe and/or dispersion devices.
In addition to control of landscape watering, pad drainage shall slope away from structures.

PDF-GEO-12 **Conventional Foundation Recommendations.** Appendix E includes recommendations for foundation design, including bearing subgrades, subgrade verification, footing depth and width, and bearing pressures, provided for preliminary design purposes and the final expansion index shall be determined following grading. Conventional or post-tensioned foundations shall be used to support the proposed structures. All footings should meet current slope setback requirements. Foundations shall be designed for low expansive soil conditions. The proposed project shall comply with conventional foundation design, as outlined in the final design of the project.

PDF-GEO-13 **General Recommendations.** The project shall comply with the following general recommendations:

1. Drainage and Site Maintenance: All slab foundation areas shall be moisture conditioned to at least optimum moisture, but no more than 5 percent above optimum moisture for a depth of at least 12 inches below subgrade for low expansion index soil. The post-tensioned slab designer shall determine if the moisture penetration is sufficient for this design. The subgrade soil moisture shall be observed by a soil engineer or his/her representative prior to pouring concrete. It is suggested the above stated moisture be obtained and maintained at least a suggested 2 days prior to pouring concrete.
2. A 10-mil Visqueen vapor barrier shall be placed underneath habitable area slabs and/or slabs with floor coverings. This barrier can be placed directly on the subgrade soils, but should be overlain by a two-inch layer of imported sand. This vapor barrier shall be lapped and sealed (especially around the utility perforations) adequately to provide a continuous waterproof barrier under the entire slab.

3. Surface water shall be kept from infiltrating into the subgrade adjacent to the house foundation system. This may include, but not be limited to rain water, roof water, landscape water and/or leaky plumbing. The lots are to be fine graded at the completion of construction to include positive drainage away from the structure and roof water will be collected via gutters, downspouts, and transported to the street in buried drain pipes. Homebuyers should be cautioned against constructing open draining planters adjacent to the houses, or obstructing the yard drainage in any way.
4. Utility trenches beneath the slabs shall be backfilled with compacted native soil materials, free of rocks.
5. Subgrade soil beneath footings and slabs should be premoistened prior to placement of concrete.
6. Standard County of Los Angeles structural setback guidelines are applicable, except where superseded by specific recommendations by the project geologist and geotechnical engineer.
7. Building or structure footings shall be set back a horizontal distance, consistent with the requirements of Appendix E.
8. Prior to placing concrete in the footing excavations, an inspection shall be made by our representative to ensure that the footings are free of loose and disturbed soils and are embedded in the recommended material.

PDF-GEO-14 **Retaining Walls.** Retaining wall footings should be founded into compacted fill or dense terrace deposits. The near surface on site soils have a low expansion index and should be confirmed prior to foundation construction. The equivalent fluid pressures recommended are based on the assumption of a uniform backfill and no build-up of hydrostatic pressure behind the wall. To prevent the build-up of lateral soil pressures in excess of the recommended design pressures, over compaction of the fill behind the wall should be avoided. This can be accomplished by placement of the backfill above a 45-degree plane projected upward from the base of the wall, in lifts not exceeding eight inches in loose depth, and compacting with a hand-operated or small, self-propelled vibrating plates.

1. **Conventional (Yielding) Retaining Walls.** All recommendations for active lateral earth pressures contained herein assume that the anticipated retaining structures are in tight contact with the fill soil (or dense alluvium) that they are supposed to support. The earth support system must be sufficiently stiff to hold horizontal movements in the soil to less than one percent of the height of the vertical face, but should be free-standing to the point that they yield at the top at least 0.1 percent of the height of the wall.
2. **Earth Pressures on Conventional (Yielding) Retaining Walls.** The earth pressures on walls retaining permeable material, compacted fill, or natural soil shall be assumed equal to that exerted by an equivalent fluid with densities consistent with those listed in Appendix E.
3. **Restrained (Non-Yielding) Walls.** Restrained (Non-Yielding) Walls shall be constructed consistent with ASTM D-1557-12, and the requirements of Appendix E.
4. **Seismic Pressures for Retaining Walls.** Seismic Pressures for Retaining Walls shall be constructed consistent with the requirements of Appendix E.

PDF-GEO-15 **General Recommendations for Retaining Walls.** The following general recommendations shall be implemented for construction of retaining walls:

- Any anticipated superimposed loading, such as upper retaining walls, other structures, within a 45-degree projection upward from the wall bottom, except retained earth, shall be considered as surcharge and provided in the design.
- A vertical component equal to one-third of the horizontal force so obtained may be assumed at the application of force.
- The depth of the retained earth shall be the vertical distance below the ground surface, measured at the wall face for stem design or measured at the heel of the footing for overturning and sliding.
- The walls shall be constructed with weep holes near the bottom, on five-foot centers or with perforated drainpipe in a gravel envelope at the bottom and behind the wall. A one-foot thick zone of clean granular, free-draining material should be placed behind the wall to within three feet of the surface. On-site soil may be used for the remainder of the backfill and should be compacted to 90 percent relative compaction as determined by ASTM Test Designation D-1557-12.
- A concrete-lined swale is recommended behind retaining walls that can intercept surface runoff from upslope areas. The surface runoff shall be transferred to an approved drainage channel via non-erosive drainage devices.

4.7.5 Impacts Analysis

1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a. 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 based on other substantial evidence of as known fault. Refer to Division of Mines and Geology Special Publication 42?

An active fault is defined by CGS as a fault showing evidence for activity within the last 11,000 years (CGS 2019). According to the geotechnical investigation prepared for the project (Appendix E), the project site is not located on any known active, potentially active, or inactive fault traces or within a State of California Earthquake Special Study Zone or Alquist-Priolo Zone. The closest earthquake fault to the project site is the Sierra Madre Fault, located approximately 700 feet to the north (Appendix E). However, as stated in the geotechnical investigation, the portion of the Sierra Madre Fault located closest to the project site is not located in the Earthquake Fault Zone; therefore, the potential for ground rupture on the project site is considered low.

Adoption of project would establish the zoning and development standards to guide future development on-site, which would consist of 42 detached single-family residential units and 3.39 acres of open space (including an approximately 3.04-acre dedicated neighborhood park), within the 17.30-acre project site. Future development under the project would adhere to the most current CBC standards. Appropriate measures to minimize the effects of earthquakes and other geotechnical hazards are included in the CBC, with specific provisions pertaining to seismic load and design. The CBC has been adopted by the City as the Building Code of the City of Sierra Madre, pursuant of Chapter 15.04 of the Sierra Madre Municipal Code. Design and construction of the project in accordance with the CBC would minimize the adverse effects of strong ground shaking to the greatest degree feasible. The proposed project would be required to comply with all existing regulations, including the CBC and the City's Municipal Code in order to ensure seismic safety. In addition, the project would comply with **PDF-GEO-**

1 through **PDF-GEO-15**, which include specific project recommendations from the geotechnical investigation. Therefore, the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, and impacts would be less than significant.

b. Strong seismic ground shaking?

As discussed in Section 4.7.1, Existing Conditions, the project site is located approximately 700 miles south of the Sierra Madre Fault and 2 miles north of the Raymond Fault. Although the Sierra Madre and Raymond Faults are the primary faults that pose a hazard to the City, earthquakes occurring on other regional faults could also cause considerable damage. Other notable faults in the region include the San Andreas (approximately 27 miles northeast of the project site), Newport Inglewood (approximately 21 miles the southwest of the project site), Palos Verdes (approximately 30 miles southwest of the project site), and Malibu Coast Faults (approximately 43 miles west of the project site), all of which are considered to be active. An earthquake along any of these faults would represent a hazard on the region, potentially causing many deaths and injuries, along with extensive property damage (City of Sierra Madre 2015). As discussed previously, adoption of the project would eventually result in development 42 detached single-family residential units and 3.39 acres of open space (including an approximately 3.04-acre dedicated neighborhood park), within the 17.30-acre project site. As mentioned under Threshold a, development of the project would adhere to the most current CBC standards. Design and construction of the project in accordance with the CBC would minimize the adverse effects of strong ground shaking to the greatest degree feasible. In addition, as discussed above, the project would be required to implement **PDF-GEO-1** through **PDF-GEO-15**, which include specific project recommendations from the geotechnical investigation. Therefore, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Impacts would be **less than significant.**

c. Seismic-related ground failure, including liquefaction?

As discussed in Section 4.7.1, the City has one liquefaction hazard zone, located near Little Santa Anita Canyon, in the northeastern part of the City. However, the City's General Plan designates the project site as being located outside of this liquefaction zone (City of Sierra Madre 2015). Additionally, the project site is underlain by older alluvium and has a groundwater level that is at least 100 feet below the ground surface; thus, potential for liquefaction is considered low (Appendix E). However, the geotechnical investigation indicated that artificial fill can be located from 5 to 18 feet bgs and concluded that the boring samples that were excavated and tested indicate that the upper 7 feet of terrace deposits on the project site are subject to hydroconsolidation, commonly referred to as soil collapse (Appendix E). Furthermore, previously place artificial fill on the project site is not suitable for structural support and support of structural fill. Therefore, construction within the artificial fill area would create a **potentially significant impact (Impact GEO-1)** to seismic-related ground failure**.** Nonetheless, implementation of **MM-GEO-1**, discussed in Section 4.7.6, would be implemented to reduce potential for hydroconsolidation by removing and recompacting the existing artificial fill on-site, as deep as 18 feet bgs. The removal of the remedial fill and recompaction activities have been included in the construction schedule and assumptions of the project, including the 3,528 cubic yards of import that would be required for grading (see Section 3.3.9) and would not require additional import and export of soils outside of what has been analyzed throughout this EIR. Therefore, with incorporation of **MM-GEO-11** as well as **PDF-GEO-1** through **PDF-GEO-15**, impacts associated with seismic-related ground failure would be **less than significant.**

d. Landslides?

As discussed in Section 4.7.1, two major landslides have occurred in the northern hillside areas of the City. However, the City's General Plan designates the project site as being located outside of any potential landslide zone (City of Sierra Madre 2015). Additionally, the project site does not contain slopes susceptible to landslides and is not located within a seismic hazard zone; thus, the potential for earthquake-induced landslides is considered low (Appendix E). Therefore, impacts associated with landslides would be **less than significant**.

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

Construction Impacts

Excavation and ground-disturbing activities during construction of the project could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. As discussed in Section 4.10, Hydrology and Water Quality, of this EIR, construction of the project would result in more than 1 acre of land disturbance; therefore, the project would be required to prepare and implement a site-specific Stormwater Pollution Prevention Plan (SWPPP) in accordance with the State Water Resources Control Board (SWRCB). Conditions of these existing regulations would include adherence to sediment and stormwater pollutant control best management practices (BMPs), effluent monitoring and compliance, post-construction-period requirements, worker training, and various other measures designed to minimize potential for soil erosion and loss of top soil. In addition, the project would be required to implement **PDF-GEO-1** through **PDF-GEO-15**, which include specific project recommendations from the geotechnical investigation, to further reduce potential erosion or loss of topsoil associated with construction of the project.

Operational Impacts

After adoption of the project, which would establish the zoning and development standards to guide future development on-site, the site would be developed with 42 detached single-family residential units and 3.39 acres of open space (including an approximately 3.04-acre dedicated neighborhood park), within the 17.30-acre project site (see Figure 3-2, Conceptual Site Plan, in Chapter 3, Project Description, of this EIR) resulting in more impervious area to the site. As such, the proposed area to be developed would be graded and paved, reducing the possibility for soil erosion or loss of topsoil compared to current conditions. However, introducing more impervious area would result in more surface runoff, which could lead to more soil erosion and loss of topsoil. However, the project would include a new stormwater drainage system (see Figure 3-5, Proposed Drainage Plan, in Chapter 3 of this EIR) that would assist in reducing runoff velocities that contribute to downstream erosion and sediment transport. Additionally, the proposed park would remain pervious, allowing percolation of water into the underlying soils. Lastly, the project would include landscaped parkways, tree plantings, landscaping throughout the project site, providing pervious area that would reduce surface runoff that would potentially lead to soil erosion and loss of topsoil. In addition, the project would be required to implement **PDF-GEO-1** through **PDF-GEO-15**, which include specific project recommendations from the geotechnical investigation, to further reduce potential erosion or loss of topsoil associated with operations of the project.

Conclusion

As discussed previously, the project would be required to comply with existing regulations and implement **PDF-GEO-1** through **PDF-GEO-15**, which include specific project recommendations from the geotechnical investigation, including erosion measures during grading and prior to the completion and construction of permanent drainage controls. reduce potential erosion or loss of topsoil associated with operations of the project. With implementation of **PDF-GEO-1** through **PDF-GEO-2**, impacts would be **less than significant**.

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?*

As stated in Section 4.7.1, the City's General Plan does not designate the project site as being located within a liquefaction zone or a landslide zone. The project site is comprised of Urban land-Soboba-Tujunga complex (72.2%) and Trigo family, granitic substratum (27.7%) (USDA 2020). As such, these on-site soils have a considerably low expansive potential. However, boring samples from the project site that were excavated and tested. The geotechnical investigation indicated that artificial fill can be located from 5 to 18 feet bgs and that the upper 7 feet of terrace deposits on the project site are subject to hydroconsolidation, commonly referred to as soil collapse. The project would reduce potential for hydroconsolidation by removing and recompacting the upper 7 feet of terrace deposits on the project site. Furthermore, previously placed artificial fill on the project site is not suitable for structural support and support of structural fill. Therefore, construction within the artificial fill area would create a **potentially significant impact (Impact GEO-2)** to unstable soils**.** Nonetheless, implementation of **MM-GEO-1,** discussed in Section 4.7.6, below, would be implemented to reduce potential for hydroconsolidation by removing and recompacting the existing artificial fill on-site, as deep as 18 feet bgs. The removal of the remedial fill and recompaction activities have been included in the construction schedule and assumptions of the project, including the 3,528 cubic yards of import that would be required for grading (see Section 3.3.9) and would not require additional import and export of soils outside of what has been analyzed throughout this EIR. Therefore, with incorporation of **MM-GEO-1**, as well as **PDF-GEO-1** through **PDF-GEO-15**, impacts associated with a geologic unit that or soil that is unstable, or that would become unstable as a result of the project would be **less than significant**.

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?*

As discussed in Section 4.7.1, the project site is underlain by soil with low expansion potential (Appendix E). The project site is composed of Urban land-Soboba-Tujunga complex (72.2%) and Trigo family, granitic substratum (27.7%) (USDA 2020), which have a considerably low expansive potential. Adoption of the project would eventually result in development 42 detached single-family residential units and 3.39 acres of open space (including an approximately 3.04-acre dedicated neighborhood park), within the 17.30-acre project site. As mentioned previously, development under the project would adhere to the most current CBC standards. Design and construction of the project in accordance with the CBC would minimize the adverse effects of strong ground shaking to the greatest degree feasible. In addition, the Project would comply with **PDF-GEO-12,** which requires conventional foundation recommendations to be incorporated by the project that further reduce potential impacts associated with expansive soils. Therefore, impacts associated with risk to life or property associated with expansive soils would be **less than significant.**

5. *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

The project would not include septic tanks or other alternative wastewater treatment methods. Therefore, implementation of the proposed project would result in **no impact** associated with soils incapable of supporting septic systems or alternative wastewater treatment methods.

6. *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

As discussed in Section 4.7.1, according to the City's General Plan, no paleontological resources have been identified within the City (City of Sierra Madre 2015). A records search was completed for the proposed project by the LACM on December 4, 2020. Although no fossils are recorded from within the project site, fossil localities are documented nearby from sedimentary deposits that are similar to those underlying the project site. According to the records search

results received from LACM, older alluvial deposits in the greater Los Angeles area have yielded scientifically significant vertebrate fossil specimens. A locality in Highland Park of Los Angeles, LACM VPCIT 342, yielded Pleistocene megafaunal remains, including mammoth (*Mammuthus*) and bison (*Bison*) at approximately 14 feet bgs. A second locality in the Coyote Pass area of Monterey Park, LACM VP 3363, produced a specimen of horse (*Equus*) at an unknown depth. Their locality, LACM VP 1023, located along Workman Street was discovered during storm drain excavations, and produced specimens of bird (Aves). At locality LACM VP 2032, near the Interstate (I-) 5 and I-10 interchange and Mission Road, mastodon (*Mammut*) remains were recovered between 20 and 35 feet bgs. Locality LACM VP 7702, near Atlantic Boulevard, yielded an assemblage of microvertebrate remains, including the following taxa: fish (*Gasterosteus*), snake (*Colubridae*), rodent (*Thomomys*, *Microtus*), and rabbit (*Sylvilagus*) (LACM 2020).

Quaternary terrace deposits of Pleistocene age (approximately 200,000 to 11,000 years old) are mapped as underlying the eastern and southern portions of the project area according to the geotechnical investigation (Appendix E). These Pleistocene age deposits have the potential to yield scientifically significant paleontological resources. Therefore, impacts associated with paleontological resources would be **potentially significant** (**Impact GEO-3**). However, implementation of **MM-GEO-2,** which requires paleontological monitoring and resource treatment, would be implemented and would reduce impacts to less than significant.

4.7.6 Mitigation Measures

The following mitigation measure (**MM-GEO-1**), would be required to reduce impacts to unstable soils or ground failure, including liquefaction, from hydroconsolidation (**Impact GEO-1**) and impacts to unstable soils **(Impact GEO-2)** to less than significant:

MM-GEO-1 **Removal and Recompaction of Artificial Soil.** Prior to the commencement of any construction activity on site, the project contractor shall remove and recompact all artificial soil present within the limits of proposed grading, as deep as 18 feet bgs.

The following mitigation measure (**MM-GEO-2**) would be required to reduce impacts to any unique paleontological resources (**Impact GEO-3**) to less than significant:

MM-GEO-2 **Paleontological Monitoring and Resource Treatment**. Prior to the commencement of any grading activity on site, the project applicant shall retain a Qualified Paleontologist meeting the Society of Vertebrate Paleontology (SVP) standards and guidelines, subject to the review and approval of the City of Sierra Madre's Planning Department. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the guidelines of the SVP. The Qualified Paleontologist shall attend the pre-construction meeting and their representative, the Qualified Monitor, shall be on site during all rough grading and other significant ground-disturbing activities at depths greater than 5 feet below the ground surface. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the Qualified Monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot-radius buffer. Once documentation and collection of the find is completed, the Qualified Monitor shall remove the rope and allow grading to recommence in the area of the find.

4.7.7 Level of Significance After Mitigation

All impacts would be **less than significant** after the incorporation of **MM-GEO-1** and **MM-GEO-2**.

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4.8 Greenhouse Gas Emissions

This section describes the existing greenhouse gas (GHG) conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. An Air Quality and Greenhouse Gas Emissions Analysis Technical Report that evaluated and identified potential GHG emission impacts associated with the project was prepared for the project by Dudek in November 2020 and has been included as Appendix B of this Environmental Impact Report (EIR).

4.8.1 Existing Conditions

4.8.1.1 Climate Change Overview

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (i.e., decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017a).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and is the most significant driver of observed climate change (EPA 2017a; IPCC 2013). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Appendix B.

4.8.1.2 Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code, Section 38505(g), for purposes of administering many of the State's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also CEQA Guidelines, Section 15364.5). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[1]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (e.g., rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., CFCs, HCFCs, and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the ozone depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.

[1] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (IPCC 1995), IPCC Fourth Assessment Report (IPCC 2007), CARB's "Glossary of Terms Used in GHG Inventories" (CARB 2015), and EPA's "Glossary of Climate Change Terms" (EPA 2016).

- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

Chlorofluorocarbons. CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere) and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric O_3.

Hydrochlorofluorocarbons. HCFCs are a large group of compounds, whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived species that varies spatially, which makes it difficult to quantify the global warming potential. Diesel particulate matter emissions are a major source of black carbon and are TACs that have been regulated and controlled in California for several decades to protect public health. In relation to declining diesel particulate matter from the California Air Resources Board's (CARB) regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014).

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.

Ozone. Tropospheric O_3, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

4.8.1.3 Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects

atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016). The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

The current version of the California Emissions Estimator Model (CalEEMod) (version 2016.3.2) assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2) (CAPCOA 2017), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the project.

4.8.1.4 Sources of Greenhouse Gas Emissions

Per the EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018 (EPA 2020), total United States GHG emissions were approximately 6,677 million MT CO_2e in 2018. The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81% of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92.8% of CO_2 emissions in 2018. Relative to 1990, gross United States GHG emissions in 2018 are higher by 3.7%; down from a high of 15.5% above 1990 levels in 2007. GHG emissions increased from 2017 to 2018 by 3.1% and overall, net emissions in 2018 were 10.2% below 2005 levels (EPA 2020).

According to California's 2000–2018 GHG emissions inventory (2020 edition), California emitted 425 MMT CO_2e in 2018, including emissions resulting from out-of-state electrical generation (CARB 2020). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emission source categories and their relative contributions in 2018 are presented in Table 4.8-1.

Table 4.8-1. Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.50	40%
Industrial	89.18	21%
Electric power[b]	63.11	15%
Commercial and residential	41.37	10%
Agriculture	32.57	8%
High global-warming potential substances	20.46	5%
Recycling and waste	9.09	2%
Total	**425.28**	**100%**

Source: CARB 2020.
GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent.
Emissions reflect the 2018 California GHG inventory.
[a] Percentage of total has been rounded, and total may not sum due to rounding.
[b] Includes emissions associated with imported electricity, which account for 24.57 MMT CO_2e annually.

4.8.2 Relevant Plans, Policies, and Ordinances

Federal

Massachusetts v. EPA

In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national GHG emissions (EPA 2007):

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and directs National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling previously discussed, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200). On January 12, 2017, the EPA finalized its decision to maintain the current greenhouse (GHG) emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2%–3% of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of 1°C by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives.

On September 27, 2019, the EPA and NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (84 FR 51310), which became effective November 26, 2019. The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the EPA and NHTSA issued the Part Two Rule, which will go into effect 60 days after being published in the Federal Register. The Part Two Rule sets CO_2 emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. This issue is evolving as California and 22 other states, as well as the District of Columbia and four cities, filed suit against the EPA and a petition for reconsideration of the rule on November 26, 2019. The litigation is not expected to be resolved for at least several months.

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG

emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits.

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes EOs, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

The state has taken a number of actions to address climate change. These include EOs, legislation, and CARB plans and requirements. These are summarized below.

Executive Order S-3-05

EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80% below 1990 levels

EO S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team (CAT) was formed, which subsequently issued reports from 2006 to 2010 (CAT 2006, 2010, 2016).

Assembly Bill 32

In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

State Bill 32 and Assembly Bill 197

State Bill (SB) 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40%

below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

CARB's 2007 Statewide Limit

In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons [MMT] CO_2e).

CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561[a]), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The Climate Change Scoping Plan: A Framework for Change (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS 17 CCR, Section 95480 et seq.)
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050 including: energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level, using more recent global warming potentials identified by the Intergovernmental Panel on Climate Change, from 427 MMT CO_2e to 431 MMT CO_2e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of Senate Bill (SB) 32 (Pavley, Chapter 249, Statutes of 2016).

In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (2030 Scoping Plan) for public review and comment (CARB 2017). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which are consistent with the state's long-term goals. These goals are also consistent with the Under 2 MOU (Under 2 2016) and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below 2°C. The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans [CAPs]) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project level review where there is a legally adequate CAP.[2] The Second Update was approved by CARB's Governing Board on December 14, 2017.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general

[2] *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

policies in reducing GHG emissions to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goals to be consistent. A project would be consistent if it will further the objectives and not obstruct their attainment.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions

CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, CFR, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party verified.

Executive Order B-18-12.

EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

Executive Order B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

State Bills 605 and 1383

SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCPs) in the state; and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for methane and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, methane, and fluorinated gases.

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code, Section 25402[b][1]). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California Public Resources Code, Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (California Public Resources Code, Section 25402[d]) and cost effectiveness (California Public Resources Code, Sections 25402[b][2] and [b][3]). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2019 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2020. The 2019 Title 24 Building Energy Efficiency Standards will further reduce energy used and associated GHG emissions compared to prior standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as California's Green Building Standards (CALGreen), and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2019 standards, which are the current standards, became effective January 1, 2020.

The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- When available, recycled water systems are required for residential landscaping irrigation systems.
- 65% of construction and demolition waste must be diverted from landfills

- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements; stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, and 20% cement reduction. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, and 25% cement reduction.

The California Building Standards Commission approved amendments to the voluntary measures of the CALGreen standards in December 2018. The 2019 CALGreen standards will become effective January 1, 2020. As with the 2019 Title 24 standards, the 2019 CALGreen standards focus on building energy efficiency. As previously discussed, current CALGreen Tier 1 and 2 structure relies on percentage targets of 15% and 30% above standard code. These percentages would be replaced by Energy Design Rating (EDR) scores; somewhere between 14 and 12 for Tier 1 and 0 for Tier 2, where an EDR score of 0 is the threshold for Zero Net Energy code building.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Senate Bill 1

SB 1 (Murray) (August 2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the Public Resources Code, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry. The goals included establishing solar energy systems as a viable mainstream option for both homes and businesses within 10 years of adoption, and placing solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed "Go Solar California," was previously titled "Million Solar Roofs."

California AB 1470 (Solar Water Heating)

This bill established the Solar Water Heating and Efficiency Act of 2007. The bill makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. The bill defines several terms for purposes of the act. The bill requires the commission to evaluate the data available from a specified pilot program, and, if it makes a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (Sher) (September 2002) established the Renewable Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (see SB 107, EO S-14-08, and S-21-09).

SB 1368. SB 1368 (September 2006), required the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC).

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general-purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

EO S-14-08. EO S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The California Natural Resources Agency (CNRA), through collaboration with the CEC and California Department of Fish and Wildlife (formerly the California Department of Fish and Game), was directed to lead this effort.

EO S-21-09 and SBX1-2. EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB was further directed to work with the CPUC and CEC to ensure that the regulation builds upon the RPS program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2, Simitian, statutes of 2011) signed by Governor Brown in April 2011.

SB X1 2 expanded the Renewables Portfolio Standard by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

SB X1-2 applies to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals previously listed.

SB 350. SB 350 (October 2015) further expanded the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (e.g., heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

SB 100. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Mobile Sources

AB 1493. AB 1493 (Pavley) (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Heavy Duty Diesel. CARB adopted the final Heavy Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce PM and NO_x emissions from heavy-duty diesel vehicles. The rule requires PM filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule will require nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485).

EO S-1-07. EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining LCFS for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

SB 375. SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction

targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB. If a MPO is unable to devise an SCS to achieve the GHG reduction target, the MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code, Section 65080(b)(2)(K), a SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the first SB 375 targets for the regional metropolitan planning organizations. The targets for the Southern California Association of Governments (SCAG) are an 8% reduction in emissions per capita by 2020 and a 13% reduction by 2035. Achieving these goals through adoption of a SCS is the responsibility of the metropolitan planning organizations. SCAG adopted its first RTP/SCS in April 2012. The plan quantified a 9% reduction by 2020 and a 16% reduction by 2035 (SCAG 2012). In June 2012, CARB accepted SCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve SCAG targets. On April 4, 2016, the SCAG Regional Council adopted the 2016 RTP/SCS, which builds upon the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified an 8% reduction by 2020 and an 18% reduction by 2030 (SCAG 2016). In June 2016, CARB accepted SCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve SCAG targets. In March 2018, CARB approved SCAG's updated targets of an 8% reduction by 2020 and a 19% reduction by 2030, effective October 1, 2018, which are consistent with the reduction targets from the Connect SoCal (2020–2045 RTP/SCS), adopted May 2020 (SCAG 2020).

Advanced Clean Cars Program and Zero-Emissions-Vehicle Program. The Advanced Clean Cars program (January 2012) is a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2012). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The zero-emissions-vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

EO B-16-12. EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare. As explained under the "Federal Vehicle Standards" description above, EPA and NHTSA approved the SAFE Vehicles Rule Part One and Two, which revoked California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. As the EPA rule is the subject

of pending legal challenges, and CARB has not issued GHG adjustment factors for EMFAC, this analysis continues to utilize the best available information at this time, as set forth in EMFAC.

AB 1236. AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. The bill provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of electric vehicle charging stations is a matter of statewide concern. The bill required electric vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for electric vehicle charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by 2000.

AB 341 (Chapter 476, Statutes of 2011 [Chesbro]) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops and in August 2015 published a discussion document titled AB 341 Report to the Legislature, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020, legislative and regulatory recommendations and an evaluation of program effectiveness (CalRecycle 2012).

Other State Actions

Senate Bill 97. SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009).

With respect to GHG emissions, the CEQA Guidelines state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: Agriculture, Biodiversity and Habitat, Emergency Management, Energy, Forestry, Ocean and Coastal Ecosystems and Resources, Public Health, Transportation, and Water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). In January 2018, the CNRA released the Safeguarding California Plan: 2018 Update, which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

2015 State of the State Address. In January 2015, Governor Brown in his inaugural address and annual report to the Legislature established supplementary goals, which would further reduce GHG emissions over the next 15 years. These goals include an increase in California's renewable energy portfolio from 33% to 50%, a reduction in vehicle petroleum use for cars and trucks by up to 50%, measures to double the efficiency of existing buildings, and decreasing emissions associated with heating fuels.

2016 State of the State Address. In his January 2016 address, Governor Brown established a statewide goal to bring per capita GHG emission down to two tons per person, which reflects the goal of the Global Climate Leadership Memorandum of Understanding (Under 2 MOU) to limit global warming to less than two degrees Celsius by 2050. The Under 2 MOU agreement pursues emission reductions of 80% to 95% below 1990 levels by 2050 and/or reaching a per capita annual emissions goal of less than 2 metric tons by 2050. A total of 135 jurisdictions representing 32 countries and 6 continents, including California, have signed or endorsed the Under 2 MOU (Under 2 2016).

Local

South Coast Air Quality Management District

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigations for potentially significant impacts. Although air districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues (SCAQMD 2008). As discussed in Section 4.8.3, Thresholds of Significance, the South Coast Air Quality Management District (SCAQMD) has recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects; however, these thresholds were not adopted.

Southern California Association of Governments

The SCAG implements the RTP/SCS for the region in accordance with the state goals for achieving SB 375 GHG reductions. Please see Section 4.11, Land Use and Planning, for additional discussion regarding the SCAG's RTP/SCS.

City of Sierra Madre General Plan

The Air Quality Element of the City of Sierra Madre's (City) General Plan (City of Sierra Madre 2015) includes the goals and policies that result in co-benefits with reducing GHG emissions. The Air Quality Element of the City's General Plan is discussed in Section 4.3, Air Quality, of this EIR. The Transportation Element includes issues and policies that result in benefits with reducing GHG emissions, these applicable issues and policies are listed below. Please refer to Section 4.8.5, Impact Analysis, and Table 4.11-1 in Section 4.11, Land Use and Planning, for a consistency analysis with these policies.

Policy L51.5 Encourage and support the use of non-automotive travel throughout the City.

Policy L51.6 Encourage City staff, employees, residents and visitors to walk and bicycle as often as possible.

Policy L51.7 Utilize non-automotive transportation solutions as a tool to further goals related to environmental sustainability and economic development.

Policy L51.8 Prioritize improvements for non-vehicular modes like bicycles, pedestrians, and transit to eliminate the need for new or expanded roadways and intersection improvements like traffic signals.

4.8.3 Thresholds of Significance

The significance criteria used to evaluate the project's GHG emissions impacts is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this GHG emissions analysis, the project would have a significant environmental impact if it would (14 CCR 15000 et seq.):

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the proposed project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated on a project-level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory, titled "Discussion Draft CEQA and Climate Change Advisory," states the following (OPR 2018):

> Neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for perming an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. Even in the absence of clearly defined thresholds for GHG emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

The SCAQMD has not adopted recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects. In October 2008, SCAQMD presented to the Governing Board the Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG)

Significance Threshold (SCAQMD 2008). The guidance document was not adopted or approved by the Governing Board. This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions.

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. In December 2008, the SCAQMD adopted an interim 10,000 MT CO_2e per year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project level analyses and 6.6 MT CO_2e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

The City understands that the 3,000 MT CO_2e per year threshold was proposed a decade ago and was never adopted. However, the 3,000 MT CO_2e per year threshold was developed and recommended by SCAQMD, an expert agency, based on substantial evidence as provided in the Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold (SCAQMD 2008) document and subsequent Working Group meetings (latest in 2010). This threshold uses the Executive Order S-3-05 goal as the basis, so it is not tied to only the 2020 target year and is thus not outdated. This threshold is also based on the 90% capture rate methodology, which means that 90% of total emissions from all new or modified projects would be subject to some type of CEQA analysis, which was the approach taken by SCAQMD to establish the stationary/industrial source threshold, as well as by the California Air Resources Board (for interim threshold for stationary source projects) and one of

the options suggested by the California Air Pollution Control Officers Association (quantitative threshold based on market capture). Further, this threshold has been used for hundreds, if not thousands of GHG analyses performed for projects located within the SCAQMD jurisdiction.

Because the project consists of a residential development and a public park, the recommended SCAQMD threshold to apply to the project is the 3,000 MT CO_2e per year for mixed-use projects. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008). This impact analysis, therefore, adds amortized construction emissions to the estimated annual operational emissions and then compares operational emissions to the proposed SCAQMD threshold of 3,000 MT CO_2e per year.

4.8.3.1 Approach and Methodology

4.8.3.1.1 Construction

CalEEMod Version 2016.3.2 was used to estimate potential project-generated GHG emissions during construction. Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 4.3 of this EIR are also applicable for the estimation of construction-related GHG emissions. See Appendix B for a discussion of construction emissions calculation methodology and assumptions.

4.8.3.1.2 Operation

Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2026 was assumed consistent with completion of project construction. CalEEMod Version 2016.3.2 was used to estimate potential project-generated operational GHG emissions from area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment. Emissions from each category are discussed in detail in Appendix B.

4.8.4 Project Design Features

There are no project design features that apply to greenhouse gas emissions.

4.8.5 Impacts Analysis

1. ***Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

The proposed project would establish The Meadows at Bailey Canyon Specific Plan (Specific Plan), which would establish the zoning and development standards to guide future development of single-family residential uses on approximately 9.19 acres of the 17.30-acre project site, and 3.39 acres of open space (including a 3.04-acre neighborhood public park). Future development of the project site under the Specific Plan would result in the following GHG emissions.

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, haul trucks, on-road vendor trucks, and worker vehicles. The SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008) recommends that "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 4.8.3.1.1, Construction. Construction of the project is anticipated to commence in February 2024 and would last approximately 16 months, ending in May 2025 (see Chapter 3, Project Description, of this EIR). On-site sources of GHG emissions include off-road equipment and off-site sources including haul trucks, vendor trucks, and worker vehicles. Table 4.8-2 presents construction emissions for the project in 2024 and 2025 from on-site and off-site emission sources.

Table 4.8-2. Estimated Annual Construction Greenhouse Gas Emissions - Unmitigated

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2024	922.98	0.18	0.00	927.54
2025	232.10	0.03	0.00	232.90
			Total	**1,160.44**
			Amortized emissions over 30 years (MT CO_2e per year)	**38.68**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix B for complete results.
The values shown are the annual emissions reflect California Emissions Estimator Model "mitigated" output.
Totals may not add due to rounding.

As shown in Table 4.8-2, the estimated total GHG emissions during construction of would be approximately 1,160 MT CO_2e over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 39 MT CO_2e per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operational Emissions

Operation of the project would generate GHG emissions through motor vehicle and delivery truck trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Appendix B.

The estimated operational project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation are shown in Table 4.8-3.

Table 4.8-3. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	13.75	0.01	0.00	14.19
Energy	171.42	0.01	0.00	172.18
Mobile	507.11	0.02	0.00	507.65
Solid waste	10.05	0.59	0.00	24.89
Water supply and wastewater	33.09	0.09	0.00	36.06
Amortized 30-Year Construction Emissions				*38.68*
Operation plus Amortized Construction Total				**793.65**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; PDF = project design feature. See Appendix B for complete results.
The values shown are the annual emissions reflect California Emissions Estimator Model "mitigated" output and operational year 2026. Totals may not add due to rounding.

As shown in Table 4.8-3, estimated annual project-generated GHG emissions would be approximately 794 MT CO_2e per year as a result of project operations and amortized construction. This would be less than the significance threshold of 3,000 MT CO_2e per year as discussed in Section 4.8.3, Thresholds of Significance. Therefore, project impacts would be **less than significant**.

2. *Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Consistency Evaluation with the Statewide GHG Reduction Strategies

The project's consistency with statewide GHG reduction strategies is summarized in detail in Table 4.8-4.

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
Building Components/Facility Operations		
Roofs/Ceilings/ Insulation	CALGreen Code (Title 24, Part 11) California Energy Code (Title 24, Part 6)	The project must comply with mandatory efficiency standards regarding roofing, ceilings, and insulation. For example: Roofs/Ceilings: New construction must reduce roof heat island effects per CALGreen Code Section 106.11.2, which requires use of roofing materials having a minimum aged solar reflectance, thermal emittance complying with Section A5.106.11.2.2 and A5.106.11.2.3 or a minimum aged Solar Reflectance Index as specified in Tables A5.106.11.2.2, or A5.106.11.2.3. Roofing materials must also meet solar reflectance and thermal emittance standards contained in Title 20 Standards. Roof/Ceiling Insulation: There are also requirements for the installation of roofing and ceiling insulation (see Title 24, Part 6 Compliance Manual, Section 3.2.2).
Flooring	CALGreen Code	The project must comply with mandatory efficiency standards regarding flooring materials. For example, for 80% of floor area receiving "resilient flooring," the flooring must meet applicable installation and material requirements contained in CALGreen Code Section 5.504.4.6.

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
Window and Doors (Fenestration)	California Energy Code	The project must comply with mandatory fenestration efficiency requirements. For example, the choice of windows, glazed doors, and any skylights for the project must conform to energy consumption requirements affecting size, orientation, and types of fenestration products used (see Title 24, Part 6 Compliance Manual, Section 3.3).
Building Walls/ Insulation	CALGreen Code California Energy Code	The project must comply with mandatory efficiency requirements for building walls and insulation. Exterior Walls: Must meet requirements in current edition of California Energy Code, and comply with Sections A5.106.7.1 or A5.106.7.2 of CALGreen Code for wall surfaces, as well as Section 5.407.1, which required weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2. Construction must also meet requirements contained in Title 24, Part 6, which vary by material of the exterior walls (see Title 24, Part 6 Compliance Manual, Part 3.2.3). Demising (Interior) Walls: Mandatory insulation requirements for demising walls (which separate conditioned from non-conditions space) differ by the type of wall material used (Id. at 3.2.4). Door Insulation: There are mandatory requirements for air infiltration rates to improve insulation efficiency; they differ according to the type of door (Id. at 3.2.5). Flooring Insulation: There are mandatory requirements for insulation that depend on the material and location of the flooring (Id. at 3.2.6).
Finish Materials	CALGreen Code	The project must comply with mandatory pollutant control requirements for finish materials. For example, materials including adhesives, sealants, caulks, paints and coatings, carpet systems, and composite wood products must meet requirements in CALGreen Code to ensure pollutant control (CALGreen Code Section 5.504.4).
Wet Appliances (Toilets/Faucets/ Urinal, Dishwasher/ Clothes Washer, Spa and Pool/Water Heater)	CALGreen Code California Energy Code Appliance Efficiency Regulations (Title 20 Standards)	Wet appliances associated with the project must meet various mandatory efficiency requirements. For example: Spa and Pool: Use associated with the project is subject to appliance efficiency requirements for service water heating systems and equipment, spa and pool heating systems and equipment (Title 24, Part 6, Sections 110.3, 110.4, 110.5; Title 20 Standards, Sections 1605.1(g), 1605.3(g); see also California Energy Code). Toilets/Faucets/Urinals: Use associated with the project is subject to new maximum rates for toilets, urinals, and faucets effective January 1, 2020 (Title 20 Standards, Sections 1605.1(h),(i) 1065.3(h),(i)): • Showerheads maximum flow rate 1.8 gallons per minute (gpm) at 80 psi • Wash fountains 2.2 x (rim space in inches/20) gpm at 60 psi • Metering faucets 0.2 gallons/cycle • Lavatory faucets and aerators 1.2 gpm at 60 psi • Kitchen faucets and aerators 1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi • Public lavatory faucets 0.5 gpm at 60 psi • Trough-type urinals 16 inches length

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		• Wall mounted urinals 0.125 gallons per flush • Other urinals 0.5 gallons per flush Water Heaters: Use associated with the project is subject to appliance efficiency requirements for water heaters (Title 20 Standards, Sections 1605.1(f), 1605.3(f)). Dishwasher/Clothes Washer: Use associated with the project is subject to appliance efficiency requirements for dishwashers and clothes washers (Title 20 Standards, Sections 1605.1(o),(p),(q), 1605.3(o),(p),(q)).
Dry Appliances (Refrigerator/ Freezer, Heater/Air Conditioner, Clothes Dryer)	Title 20 Standards CALGreen Code	Dry appliances associated with the project must meet various mandatory efficiency requirements. For example: Refrigerator/Freezer: Use associated with the project is subject to appliance efficiency requirements for refrigerators and freezers (Title 20 Standards, Sections 1605.1(a), 1605.3(a)). Heater/Air Conditioner: Use associated with the project is subject to appliance efficiency requirements for heaters and air conditioners (Title 20 Standards, Sections 1605.1(b),(c),(d),(e), 1605.3(b),(c),(d),(e) as applicable). Clothes Dryer: Use associated with the project is subject to appliance efficiency requirements for clothes dryers (Title 20 Standards, Section 1605.1(q)).
	CALGreen Code	Installations of HVAC, refrigeration and fire suppression equipment must comply with CALGreen Code Sections 5.508.1.1 and 508.1.2, which prohibits CFCs, halons, and certain HCFCs and HFCs.
Lighting	Title 20 Standards	Lighting associated with the project will be subject to mandatory energy efficiency requirements contained in Title 20 Standards. General Lighting: Indoor and outdoor lighting associated with the project must comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(j),(k),(n), 1605.3(j),(k),(n)). Emergency lighting and self-contained lighting: the project must also comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(l), 1605.3(l)). Traffic Signal Lighting: For any necessary project improvements involving traffic lighting, traffic signal modules and traffic signal lamps will need to comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(m), 1605.3(m)).
	California Energy Code	Lighting associated with the project will also be subject to mandatory energy efficiency requirements contained in Title 24, Part 6, which contains energy standards for non-residential indoor lighting and outdoor lighting (see Title 24 Part 6 Compliance Manual, at Sections 5, 6). Mandatory lighting controls for indoor lighting include, for example, regulations for automatic shut-off, automatic daytime controls, demand responsive controls, and certificates of installation (Id. at Section 5). Regulations for outdoor lighting include, for example, creation of lighting zones, lighting power requirements, a hardscape

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		lighting power allowance, requirements for outdoor incandescent and luminaire lighting, and lighting control functionality (Id. at Section 6).
	AB 1109	Lighting associated with the project will be subject to mandatory energy efficiency requirements adopted pursuant to AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.
Bicycle and Vehicle Parking	CALGreen Code	The project will be required to provide electric vehicle supply equipment (CALGreen Code Sections 4.106.4).
Landscaping	CALGreen Code	The CALGreen Code requires new residential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.
	Model Water Efficient Landscaping Ordinance	The model ordinance promotes efficient landscaping in new developments and establishes an outdoor water budget for new and renovated landscaped areas that are 500 square feet or larger (CCR, Title 23, Division 2, Chapter 2.7).
	Cap-and-Trade Program	Transportation fuels used in landscape maintenance equipment (e.g., gasoline) would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Refrigerants	CARB Management of High GWP Refrigerants for Stationary Sources	Any refrigerants associated with the project will be subject to CARB standards. CARB's Regulation for the Management of High GWP Refrigerants for Stationary Sources (1) reduces emissions of high-GWP refrigerants from leaky stationary, non-residential refrigeration equipment; (2) reduces emissions resulting from the installation and servicing of stationary refrigeration and air conditioning appliances using high-GWP refrigerants; and (3) requires verification GHG emission reductions (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5.1, Section 95380 et seq.).
Consumer Products	CARB High GWP GHGs in Consumer Products	All consumer products associated with the project will be subject to CARB standards. CARB's consumer products regulations set VOC limits for numerous categories of consumer products, and limits the reactivity of the ingredients used in numerous categories of aerosol coating products (CCR, Title 17, Division 3, Chapter 1, Subchapter 8.5).
Construction		
Use of Off-Road Diesel Engines, Vehicles, and Equipment	CARB In-Use Off-Road Diesel Vehicle Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB In-Use-Off-Road Diesel Vehicle Regulation applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014;

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The requirements and compliance dates of the Off-Road regulation vary by fleet size, as defined by the regulation.
	Cap-and-Trade Program	Transportation fuels (e.g., gasoline) used in equipment operation would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Greening New Construction	CALGreen Code	All new construction, including the project, must comply with CALGreen Code, as discussed in more detail throughout this table. Adoption of the mandatory CALGreen Code standards for construction has been essential for improving the overall environmental performance of new buildings; it also sets voluntary targets for builders to exceed the mandatory requirements.
Construction Waste	CALGreen Code	The project will be subject to CALGreen Code requirements for construction waste reduction, disposal, and recycling, such as a requirement to recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.
Worker, vendor and truck vehicle trips (on-road vehicles)	Cap-and-Trade Program	Transportation fuels (e.g., gasoline) used in worker, vendor and truck vehicle trips would be subject to the Cap-and-Trade Program.
Solid Waste		
Solid Waste Management	Landfill Methane Control Measure	Waste associated with the project will be disposed per state requirements for landfills, material recovery facilities, and transfer stations. Per the statewide GHG emissions inventory, the largest emissions from waste management sectors come from landfills, and are in the form of CH_4. In 2010, CARB adopted a regulation that reduces emissions from methane in landfills, primarily by requiring owners and operators of certain uncontrolled municipal solid waste landfills to install gas collection and control systems, and requires existing and newly installed gas and control systems to operate in an optimal manner. The regulation allows local air districts to voluntarily enter into a memorandum of understanding with CARB to implement and enforce the regulation and to assess fees to cover costs of implementation.
	Mandatory Commercial Recycling (AB 341)	AB 341 will require the project, if it generates four cubic yards or more of commercial solid waste per week, to arrange for recycling services, using one of the following: self-haul; subscribe to a hauler(s); arranging for pickup of recyclable materials; subscribing to a recycling service that may include mixed waste processing that yields diversion results comparable to source separation. The project will also be subject to local commercial solid waste recycling program required to be implemented by each jurisdiction under AB 341.

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
	CALGreen Code	The project will be subject to CALGreen Code requirement to provide areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling (CALGreen Code Section 5.410.1).
Energy Use		
Electricity/Natural Gas Generation	Cap-and-Trade Program	Electricity and natural gas usage associated with the project will be subject to the Cap-and-Trade Program. The rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, importers and distributors of fossil fuels were added to the Cap-and-Trade Program in the second phase. Specifically, on January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, reformulated gasoline blendstock for oxygenate blending (RBOB), distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 metric tons or more of CO_2e annually from the GHG emissions that would result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California.
Renewable Energy	California RPS (SB X1-2, SB 350, and SB 100)	Energy providers associated with the project will be required to comply with RPS set by SB X1 2, SB 350, and SB 100. SB X1 2 requires investor-owned utilities, publicly-owned utilities, and electric service providers to increase purchases of renewable energy such that at least 33% of retail sales are procured from renewable energy resources by December 31, 2020. In the interim, each entity was required to procure an average of 20% of renewable energy for the period of January 1, 2011 through December 31, 2013; and will be required to procure an average of 25% by December 31, 2016, and 33% by 2020. SB 350 requires retail sellers and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030. SB 100 increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California by 2045.
	Million Solar Roofs Program (SB 1)	The project will participate in California's energy market, which is affected by implementation of the Million Solar Roofs Program. As part of Governor Schwarzenegger's Million Solar Roofs Program, California has set a goal to install 3,000 megawatts of new, solar capacity through 2016. The Million Solar Roofs Program is a

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time.
	California Solar Initiative- Thermal Program	The project will participate in California's energy market, which is affected by implementation of the California Solar Initiative -Thermal Program. The program offers cash rebates of up to $4,366 on solar water heating systems for single-family residential customers. Multifamily and Commercial properties qualify for rebates of up to $800,000 on solar water heating systems and eligible solar pool heating systems qualify for rebates of up to $500,000. Funding for the California Solar Initiative-Thermal program comes from ratepayers of Pacific Gas & Electric, Southern California Edison, Southern California Gas Company, and San Diego Gas & Electric. The rebate program is overseen by the CPUC as part of the California Solar Initiative.
	Waste Heat and Carbon Emissions Reduction Act (AB 1613, AB 2791)	The project will participate in California's energy market, which is affected by implementation of the Waste Heat and Carbon Emissions Reduction Act. Originally enacted in 2007 and amended in 2008, this act directed the CEC, CPUC, and CARB to implement a program that would encourage the development of new combined heat and power systems in California with a generating capacity of not more than 20 megawatts, to increase combined heat and power use by 30,000 gigawatt-hour. The CPUC publicly owned electric utilities, and CEC duly established policies and procedures for the purchase of electricity from eligible combined heat and power systems. CEC guidelines require combined heat and power systems to be designed to reduce waste energy; have a minimum efficiency of 60%; have NOx emissions of no more than 0.07 pounds per megawatt-hour; be sized to meet eligible customer generation thermal load; operate continuously in a manner that meets expected thermal load and optimizes efficient use of waste heat; and be cost effective, technologically feasible, and environmentally beneficial.
Vehicular/Mobile Sources		
General	SB 375 and SCAG RTP/SCS	The project complies with, and is subject to, SCAG adopted RTP/SCS (Connect SoCal), which CARB approved as meeting its regional GHG targets in 2020.
Fuel	Low Carbon Fuel Standard (LCFS)/ EO S-01-07	Auto trips associated with the project will be subject to LCFS (EO S-01-07), which requires a 20% or greater reduction in the average fuel carbon intensity by 2030 with a 2010 baseline for transportation fuels in California regulated by CARB. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG goals.
	Cap-and-Trade Program	Use of gasoline associated with the project will be subject to the Cap-and-Trade Program. The rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, importers

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		and distributors of fossil fuels were added to the Cap-and-Trade Program in the second phase. Specifically, on January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, RBOB, distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 MT or more of CO_2e annually from the GHG emissions that would result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California.
Automotive Refrigerants	CARB Regulation for Small Containers of Automotive Refrigerant	Vehicles associated with the project will be subject to CARB's Regulation for Small Containers of Automotive Refrigerant (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5, Section 95360 et seq.). The regulation applies to the sale, use, and disposal of small containers of automotive refrigerant with a GWP greater than 150. The regulation achieves emission reductions through implementation of four requirements: (1) use of a self-sealing valve on the container, (2) improved labeling instructions, (3) a deposit and recycling program for small containers, and (4) an education program that emphasizes best practices for vehicle recharging. This regulation went into effect on January 1, 2010, with a 1-year sell-through period for containers manufactured before January 1, 2010. The target recycle rate is initially set at 90%, and rises to 95% beginning January 1, 2012.
Light-Duty Vehicles	AB 1493 (or the Pavley Standard)	Cars that drive to and from the project will be subject to AB 1493, which directed CARB to adopt a regulation requiring the maximum feasible and cost-effective reduction of GHG emissions from new passenger vehicles. Pursuant to AB 1493, CARB adopted regulations that establish a declining fleet average standard for CO_2, CH_4, N_2O, and HFCs (air conditioner refrigerants) in new passenger vehicles and light-duty trucks beginning with the 2009 model year and phased-in through the 2016 model year. These standards are divided into those applicable to lighter and those applicable to heavier portions of the passenger vehicle fleet. The regulations will reduce "upstream" smog-forming emissions from refining, marketing, and distribution of fuel.
	Advanced Clean Car and ZEV Programs	Cars that drive to and from the project will be subject to the Advanced Clean Car and ZEV Programs. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, new automobiles will emit 34% fewer global warming gases and 75% fewer smog-

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		forming emissions. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018–2025 model years.
	Tire Inflation Regulation	Cars that drive to and from the project will be subject to the CARB Tire Inflation Regulation, which took effect on September 1, 2010, and applies to vehicles with a gross vehicle weight rating of 10,000 pounds or less. Under this regulation, automotive service providers must, inter alia, check and inflate each vehicle's tires to the recommended tire pressure rating, with air or nitrogen, as appropriate, at the time of performing any automotive maintenance or repair service, and to keep a copy of the service invoice for a minimum of three years, and make the vehicle service invoice available to the CARB, or its authorized representative upon request.
	EPA and NHTSA GHG and CAFE standards.	Mobile sources that travel to and from the project would be subject to EPA and NHTSA GHG and CAFE standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles (75 FR 25324–25728 and 77 FR 62624–63200).
Medium- and Heavy-Duty Vehicles	CARB In-Use On-Road Heavy-Duty Diesel Vehicles Regulation (Truck and Bus Regulation)	Any heavy-duty trucks associated with the project will be subject to CARB standards. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds.
	CARB In-Use Off-Road Diesel Vehicle Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB In-Use-Off-Road Diesel Vehicle Regulation applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The requirements and compliance dates of the Off-Road regulation

Table 4.8-4. Applicable Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		vary by fleet size, as defined by the regulation.
	Heavy-Duty Vehicle GHG Emission Reduction Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB Heavy-Duty Vehicle GHG Emission Reduction Regulation applies to heavy-duty tractors that pull 53-foot or longer box-type trailers (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 1, Section 95300 et seq.). Fuel efficiency is improved through improvements in tractor and trailer aerodynamics and the use of low rolling resistance tires.
	EPA and NHTSA GHG and CAFE standards.	Mobile sources that travel to and from the project would be subject to EPA and NHTSA GHG and CAFE standards for medium- and heavy-duty vehicles (76 FR 57106–57513).
Water Use		
Water Use Efficiency	EO B-40-17	EO B-40-17 lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinds EO B-29-15, but expressly states that EO B-37-16 remains in effect and directs the State Water Resources Control Board to continue development of permanent prohibitions on wasteful water use to which the project will be subject.
	SB X7-7	Water provided to the project will be affected by SB X7-7's requirements for water suppliers. SB X7-7, or the Water Conservation Act of 2009, requires all water suppliers to increase water use efficiency. It also requires, among other things, that the Department of Water Resources, in consultation with other state agencies, develop a single standardized water use reporting form, which would be used by both urban and agricultural water agencies.
	CALGreen Code	The project is subject to CALGreen Code's water efficiency standards, including a required 20% mandatory reduction in indoor water use (CALGreen Code, Division 4.3).
	California Water Code, Division 6, Part 2.10, Sections 10910–10915.	Development and approval of the project requires the development of a project-specific Water Supply Assessment.
	Cap-and-Trade Program	Electricity usage associated with water and wastewater supply, treatment and distribution would be subject to the Cap-and-Trade Program.
	California RPS (SB X1-2, SB 350, SB 100)	Electricity usage associated with water and wastewater supply, treatment and distribution associated with the project will be required to comply with RPS set by SB X1-2, SB 350, and SB 100.

AB = Assembly Bill; CARB = California Air Resources Board; CEC = California Energy Commission; CFC = chlorofluorocarbon; CH4 = methane; CO2 = carbon dioxide; CO2e = carbon dioxide equivalent; CPUC = California Public Utilities Commission; EO = Executive Order; EPA = Environmental Protection Agency; GHG = greenhouse gas; GWP = global warming potential; HCFC = hydrochlorofluorocarbon; HFC = hydrofluorocarbon; gpm = gallons per minute; MT = metric tons; N2O = nitrous oxide; NHTSA = National Highway Traffic Safety Administration; PM = particulate matter; RPS = Renewable Portfolio Standard; RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy; SB = Senate Bill; SCAG = Southern California Association of Governments; VOC = volatile organic compound; ZEV = zero emission vehicle

As shown in Table 4.8-4, with implementation of GHG reduction measures required, the project would be consistent with and would not conflict with the applicable GHG-reducing strategies of the state.

Consistency Evaluation with the City's General Plan

The City's General Plan includes various goals and policies that promote the use of clean and renewable energy sources, facilitate alternative modes of transportation and reduce VMTs, reduce waste, conserve water, and promote the efficient and sustainable use of energy. The Conservation Element includes goals and policies that result in benefits with reducing GHG emissions. Table 4.8-5, Consistency with City of Sierra Madre's General Plan Policies, summarizes the project's consistency with these applicable policies.

Table 4.8-5. Consistency with City of Sierra Madre's General Plan Policies

General Plan Policies	Project Consistency
Policy 24.1: Continue to review guidelines from time to time regarding the use of gas -powered lawn equipment, and consider tightening the restrictions on the type of equipment, hours and duration of operation.	*Consistent.* The project would install electrical outlets on the exterior of every residence to facilitate the use of electrically powered landscaping equipment in accordance with the 2019 Title 24 building standards.
Policy L51.5: Encourage and support the use of non-automotive travel throughout the City.	*Consistent.* The project is located less than 1 mile from the nearest bus stop providing access to the 268 and 487 bus lines through the Metropolitan Transportation Authority (MTA).
Policy L51.6: Encourage City staff, employees, residents and visitors to walk and bicycle as often as possible.	*Consistent.* The project will provide public benefits and amenities to the Sierra Madre community, inclusive of a public park that will welcome locals and visitors, provide natural style play features, connect to the Bailey Canyon Wilderness Park and trail, and act as a buffer along existing adjacent homes.
Policy L51.7: Utilize non-automotive transportation solutions as a tool to further goals related to environmental sustainability and economic development.	*Consistent.* The project is located less than 1 mile from the nearest bus stop providing access to the 268, 478, and 479 bus lines through MTA. Furthermore, the project connects to the Bailey Canyon Wilderness Park and trail.

Source: City of Sierra Madre 2015.

As shown in Table 4.8-5, the project would be consistent with the City's General Plan Policies.

Consistency Evaluation with the Scoping Plan

The Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the Final Statement of Reasons for the Amendments to the CEQA Guidelines, the CNRA observed that "[t]he [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient

vehicles) and associated fuels (e.g., low-carbon fuel standard), among others. The proposed project would comply with all applicable regulations adopted in furtherance of the Scoping Plan to the extent required by law.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 4.8-6 highlights measures that have been developed under the Scoping Plan and the proposed project's consistency with those measures. The table also includes measures proposed in the 2017 Scoping Plan Update. To the extent that these regulations are applicable to the proposed project, its inhabitants, or uses, the proposed project would comply with all applicable regulations adopted in furtherance of the Scoping Plan.

Table 4.8-6. Project Consistency with Scoping Plan GHG Emission-Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	The proposed project's residents would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	Motor vehicles driven by the proposed project's residents would use compliant fuels.
Low Carbon Fuel Standard (18 percent reduction in carbon intensity by 2030)	NA	Motor vehicles driven by the proposed project's residents would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	The proposed project would encourage use of alternative forms of transportation.
Reduction in Vehicle Miles Traveled	NA	The proposed project is located on an infill site, which promotes compact walkable communities with an emphasis on proximity and accessibility.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	The proposed project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards for electrical appliances and other devices at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	The proposed project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards for electrical appliances and other devices at the time of building construction.
Renewable Portfolios Standard (33 percent by 2020)	E-3	The proposed project would use energy supplied by Clean Power Alliance, which is in compliance with the Renewable Portfolio Standard.
Renewable Portfolios Standard (50 percent by 2050)	NA	The proposed project would use energy supplied by Clean Power Alliance, which is in compliance with the Renewable Portfolio Standard.
Senate Bill 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	The proposed project would include solar roofs installations in accordance with the 2019 Title 24 building standards.

Table 4.8-6. Project Consistency with Scoping Plan GHG Emission-Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Water Sector		
Water Use Efficiency	W-1	The proposed project is going to utilize water saving features including low-flow fixtures in accordance with CALGreen standards.
Water Recycling	W-2	The project would reclaim rainwater to be reused on site.
Reuse Urban Runoff	W-4	The project would reclaim rainwater to be reused on site.
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	The proposed project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-2	The proposed project's buildings would meet green building standards that are in effect at the time of construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-3	The proposed project would be required to be constructed in compliance with local green building standards in effect at the time of building construction.
Recycling and Waste Management Sector		
Mandatory Commercial Recycling	RW-3	During both construction and operation of the proposed project, the proposed project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended. During construction, all wastes would be recycled to the maximum extent possible.
High Global Warming Potential Gases Sector		
Limit High Global Warming Potential Use in Consumer Products	H-4	The proposed project's residents would use consumer products that would comply with the regulations that are in effect at the time of manufacture.

Sources: CARB 2008, 2017.
GHG = greenhouse gas; proposed project = The Farm in Poway; CARB = California Air Resources Board; EV = electric vehicle; SF_6 = sulfur hexafluoride.

Based on the analysis in Table 4.8-6, the proposed project would be consistent with the applicable strategies and measures in the Scoping Plan.

In addition to the measures outlined in the Table 4.8-6, the Scoping Plan also highlights, in several areas, the goals and importance of infill projects. Specifically, the Scoping Plan calls out an ongoing and proposed measure to streamline CEQA compliance and other barriers to infill development. The Scoping Plan encourages infill projects and sees them as crucial to achieving the state's long-term climate goals. The Scoping Plan encourages accelerating equitable and affordable infill development through enhanced financing and policy incentives and mechanisms. The state prepared a January 2019 Draft California 2030 Natural and Working Lands Climate Change Implementation Plan (Implementation Plan), which evaluates a range of implementation scenarios for natural and working lands to identify long-term sequestration goals that can be incorporated into future climate

policy. The Implementation Plan includes programs to promote and provide incentives for infill development through community revitalization and urban greening and promote the adoption of regional transportation and development plans, such as SB 375 SCS and Climate Action Plans, which prioritize infill and compact development and also consider the climate change impacts of land use and management.

The following strategies were outlined to expand infill development within the Scoping Plan:

- Encouraging regional transfer of development rights programs to allow owners of natural and working lands to sell their development rights to developers who can use those rights to add additional density to development projects in preferred infill areas.
- Promoting regional transit-oriented development funds that leverage public resources with private-sector investment capital to provide flexible capital for transit-oriented development projects.
- Rebates for low-VMT/location-efficient housing, similar to programs that use rebates to encourage adoption of energy-efficient appliances, ZEVs, water-efficient yards, or renewable energy installation. For example, the rebate could reimburse residents for a portion of the down payment for purchasing or renting a qualified home in exchange for a minimum term of residence.
- Promotion of cross-subsidizing multi-station financing districts along transit corridors to leverage revenues from development in strong-market station areas in order to seed needed infrastructure and development in weaker-market station areas.
- Abatement of residential property tax increases in exchange for property-based improvements in distressed infill areas.
- Ways to promote reduced parking in areas where viable transportation alternatives are present.
- Additional creative financing mechanisms to enhance the viability of priority infill projects.
- Ways to promote and strengthen urban growth boundaries to promote infill development and conservation of natural and working lands by defining and limiting developable land within a metropolitan area according to projected growth needs.

Consistency Evaluation with SB 375 (SCAG RTP/SCS)

On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal (2020–2045 RTP/SCS), and the addendum to the Connect SoCal Program Environmental Impact Report. SCAG's Connect SoCal is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The SCS will integrate land use and transportation strategies that will achieve GHG emissions reduction targets that are forecasted to achieve reduction in GHG emissions to achieve the state's 2045 GHG reduction goals. The Connect SoCal incorporates local land use projections and circulation networks in city and county general plans. Typically, a project would be consistent with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS. According to the VMT Assessment for the project (Appendix H), the project is located within a low VMT-generating zone that has VMT per service population that is 15% or more below the Northwest Region Baseline VMT. The project meets this definition for the 2012 base year and the 2040 cumulative year. Therefore, the project would support the VMT and GHG reducing goals of the Connect SoCal.

Because the project is not growth inducing, this type of consistency analysis does not apply. However, the major goals of the Connect SoCal are outlined in Table 4.8-7, along with the project's consistency with them.

Table 4.8-7. Project Consistency with the SCAG Connect SoCal RTP/SCS

RTP/SCS Measure	Project Consistency
Encourage regional economic prosperity and global competitiveness.	*Does not apply.* The project would not inhibit the Southern California Association of Governments (SCAG) from encouraging regional economic prosperity and global competitiveness.
Improve mobility, accessibility, reliability, and travel safety for people and goods.	*Does not apply.* The project would not inhibit SCAG from strengthening the regional transportation network for goods movement.
Enhance the preservation, security, and resilience of the regional transportation system.	*Does not apply.* The project would not inhibit SCAG from enhancing the resilience of the regional transportation system.
Increase person and goods movement and travel choices within the transportation system.	*Does not apply.* The project would not inhibit SCAG from increasing person and goods movement and travel choices within the transportation system.
Reduce greenhouse gas emissions and improve air quality.	*Consistent*. The project would result in criteria air pollutant and GHG emissions during construction and operation. However, emissions would not exceed the SCAQMD significance thresholds.
Support healthy and equitable communities.	*Consistent*. The project would provide public park space and connect to the Bailey Canyon Wilderness Park and trail.
Adapt to a changing climate and support an integrated regional development pattern and transportation network.	*Consistent*. The project is located less than 1 mile from the nearest bus stop providing access to the 268, 478, and 479 bus lines through the Metropolitan Transportation Authority (MTA).
Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	*Does not apply.* The project would not inhibit SCAG from leveraging technology for the transportation system.
Encourage development of diverse housing types in areas that are supported by multiple transportation options.	*Consistent.* The project would develop 42 residential units less than 1 mile from the nearest bus stop providing access to the 268, 478, and 479 bus lines through MTA.
Promote conservation of natural and agricultural lands and restoration of habitats.	*Consistent*. The project would not impact natural lands during construction or operation as shown in Section 4.4, Biological Resources.

Source: SCAG 2020.

As shown in Table 4.8-7, the project would not conflict with the goals within SCAG's Connect SoCal. Based on the growth forecast analysis, per capita VMT analysis, and consistency with the Connect SoCal goals, the project would be consistent with the principles of the Connect SoCal and the project would have a less than significant impact.

Conclusion

The project is consistent with the Scoping Plan, the City's General Plan, and SCAG's Connect SoCal, which all promote economic growth while achieving greater energy efficiency. The project would not conflict with any plans adopted with the purpose of reducing GHG emissions; therefore, the proposed project's impacts on GHG emissions would be **less than significant**.

4.8.6 Mitigation Measures

No mitigation is required.

4.8.7 Level of Significance After Mitigation

Impacts would be **less than significant** without mitigation.

4.9 Hazards and Hazardous Materials

This section describes the existing hazardous materials conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.9.1 Existing Conditions

A Phase I Environmental Site Assessment (ESA) and a Phase II ESA were prepared for the proposed project in July 2020 by Stantec Consulting Services Inc. (Stantec) (Appendix F1). The proposed project consists of approximately 17.30 acres of undeveloped land south of the Mater Dolorosa Retreat Center. North Sunnyside Avenue and Carter Avenue are located on the western and eastern portions of the project site, respectively. These roadways lead to the adjacent Mater Dolorosa Retreat Center to the north. The project site appears to have been used for agricultural purposes between circa 1938 and 2005. No structures or features were observed or have been historically located on the project site based on reviewed historic aerial photographs (Appendix F1).

Project Site

During the Phase I ESA, Stantec identified the following recognized environmental conditions (RECs) in connection with the project site (Appendix F1):

- **Historical Agricultural Use**. Based on review of aerial photographs, the project site appears to have been used for agricultural purposes between circa 1938 and 2005. Historic agricultural use can be a potential concern due to the possible use of pesticides and herbicides containing heavy metals. Accordingly, Stantec recommended collection of soil samples for chemical analysis to determine if pesticides or heavy metals associated with herbicides were present at levels that represent a REC or that are of concern to residential development.

Hazards in the Project Vicinity

According regulatory records, one 500-gallon leaded gasoline underground storage tank (UST) was removed from the Mater Dolorosa Retreat Center in June 1992. This UST was not located on the project site, but on the adjacent property north of the northeast corner of the project site (see Figure 4.9-1, Soil and Soil Vapor Sampling Locations). According to a Closure Report dated July 23, 1992, prepared by Conservtech, two soil samples were collected from beneath the tank and the dispenser and did not have any detections of total petroleum hydrocarbons (TPH) of the fuel related volatile organic compounds (VOCs) benzene, toluene, ethylbenzene, and xylenes (BTEX) above laboratory reporting limits Organic lead concentrations were reported at 0.73 and 0.81 milligrams per kilogram (mg/kg). Based on these results remedial action was not considered necessary and closure was recommended. The Los Angeles County Department of Public Works (DPW) issued a no further action letter dated January 4, 1993 (Appendix F1).

During the Phase I ESA, Stantec identified the following recognized environmental conditions (RECs) in connection with the project site vicinity (Appendix F1):

- **Former Gasoline Underground Storage Tank**. Based on Stantec's review of regulatory records, one 500-gallon leaded gasoline UST was removed from the adjacent property in 1992. The DPW issued a no further action letter the former UST, based on the absence of soil impacts. However, no soil vapor data was collected at the time of the closure assessment. Therefore, Stantec recommended a soil vapor assessment to evaluate if volatile organic compounds (VOCs) exists at concentrations of concern to development in close proximity to the former UST on the project site.

Schools

The closest schools to the project site include the Don Benito Fundamental School, located approximately 0.3 miles west of the project site; the Alverno Heights Academy, located 0.3 miles south of the project site; and the Sierra Madre Elementary School, located approximately 0.5 miles southeast of the project site.

Airports

The closest airport to the project site is the San Gabriel Valley Airport (formerly the El Monte Airport), located approximately 6 miles south of the project site. The San Gabriel Valley Airport is owned and operated by the County of Los Angeles (County) and is publicly available to general aviation. The project site is not located within the Airport Influence Area (AIA) of the San Gabriel Valley Airport (County of Los Angeles 2004).

Wildfire Risk

As shown in Figure 4.9-2, Fire Hazard Severity Zones, the project site is located within a wildland–urban interface location that is statutorily designated as a Local Responsibility Area Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE) and the Sierra Madre Fire Department (SMFD). A Fire Protection Plan (FPPO has been prepared for the proposed project to address potential wildfire hazards (Appendix F2). While the project site has not been subject to any wildfires in recorded fire history, 74 wildfires have burned within 5 miles of the project site since the beginning of the historical fire data record, with an average fire size of 4,500 acres (Appendix F2).

Wildland fires are a common natural hazard in most of southern California with a long and extensive history. Southern California landscapes include a diverse range of plant communities, including vast tracts of grasslands and shrublands, like those found adjacent to the center of the project site. As a result of the anticipated growing population of Los Angeles County wildland–urban interface areas, and the region's fire history, it can be anticipated that periodic wildfires may start on, burn onto, or spot into the project site. The most common type of fire anticipated in the vicinity of the project area is a wind-driven fire from the northeast moving through the native vegetation in the Angeles National Forest (Appendix F2).

Wildfire risks associated with the project are discussed in Section 4.20, Wildfire, of this Environmental Impact Report (EIR).

4.9.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Toxic Substances Control Act of 1976

The Federal Toxic Substances Control Act of 1976 tasked the U.S. Environmental Protection Agency (EPA) with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. The Federal Toxic Substances Control Act addresses the production, importation, use, and disposal of specific chemicals including PCBs, asbestos, radon, and lead-based paint (EPA 2020a).

Resource Conservation and Recovery Act of 1976

The objectives of the Resource Conservation and Recovery Act of 1976 are to protect human health and the environment from the potential hazards of waste disposal, conserve energy and natural resources, reduce the amount of waste generated, and ensure that wastes are managed in an environmentally sound manner. The Resource Conservation and Recovery Act affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act. The Hazardous and Solid Waste Amendments of 1984 also added Subtitle I, which governs underground storage tanks (EPA 2020b).

Comprehensive Environmental Response, Compensation, and Liability Act of 1980

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priorities List, which is a list of contaminated sites warranting further investigation by EPA. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986 (EPA 2018a).

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act amended CERCLA on October 17, 1986. The Superfund Amendments and Reauthorization Act had several changes and additions, including the following:

- Stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites
- Required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations
- Provided new enforcement authorities and settlement tools
- Increased state involvement in every phase of the Superfund program
- Increased the focus on human health problems posed by hazardous waste sites
- Encouraged greater citizen participation in making decisions on how sites should be cleaned up
- Increased the size of the trust fund to $8.5 billion

The Superfund Amendments and Reauthorization Act also required the EPA to revise the Hazard Ranking System to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List (EPA 2018b).

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation between states under the Code of Federal Regulations, Title 49, Chapter 1, Parts 100–185. In California, the California Department of Transportation (Caltrans) and the California Highway Patrol enforce federal law related to the transport of hazardous materials. Together, these agencies determine driver training requirements, load labelling procedures, and specifications for container types.

Occupational Safety and Health Act of 1970 and Occupational Safety and Health Administration

The Occupational Safety and Health Act of 1970 was passed to prevent workers from being killed or seriously harmed at work. The Occupational Safety and Health Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training, and assistance to employers and workers. Under the Occupational Safety and Health Act, employers have the responsibility to provide a safe workplace (OSHA 2014).

Federal Aviation Administration Functions

The Federal Aviation Administration (FAA) has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards include (1) developing and operating a common system of air traffic control and navigation for both civil and military aircraft; (2) developing and implementing programs to control aircraft noise and other environmental effects of civil aviation; (3) regulating U.S. commercial space transportation; (4) researching and developing the National Airspace System and civil aeronautics; (5) regulating civil aviation to promote safety, and (6) encouraging and developing civil aeronautics, including new aviation technology (FAA 2019).

State

Hazardous Materials Management Act

Requires that businesses handling or storing certain amounts of hazardous materials prepare a hazardous materials business plan, which includes an inventory of hazardous materials stored on site (above specified quantities), an emergency response plan, and an employee training program.

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

Requires the governor to publish and update, at least annually, a list of chemicals known to the state to cause cancer, birth defects, or other reproductive harm and to inform citizens about exposures to such chemicals.

Hazardous Waste Management Planning and Facility Siting, also known as the Tanner Act (Assembly Bill 2948, 1986)

Requires counties to prepare, for California Department of Toxic Substances Control (DTSC) approval, hazardous waste management plans and prescribes specific public participation activities, which must be carried out during the local land use permit process for siting new or expanding off-site commercial treatment, storage, and disposal facilities.

California Environmental Protection Agency

The boards, departments, and offices that make up the California Environmental Protection Agency (CalEPA) include the California Air Resources Board, the Department of Pesticide Regulation, the Department of Resources Recycling

and Recovery, DTSC, the Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board. These boards, departments, and offices were placed within the CalEPA "umbrella" to create a cabinet-level voice for the protection of human health and the environment (such as clean air, clean water, clean soil, safe pesticides, and waste recycling and reduction) to assure the coordinated deployment of state resources (CalEPA 2020a).

Cortese List/Government Code Section 65962.5

Pursuant to Government Code, Section 65962.5, environmental regulatory database lists are compiled to identify and locate properties with known hazardous substance contamination (California Government Code, Section 65960 et seq.). Four state agencies are required to provide lists of facilities that have contributed to, harbor, or are responsible for environmental contamination within their jurisdiction. The four state agencies that are required to provide these lists to the Secretary for Environmental Protection include DTSC, the State Department for Health Services, the State Water Resources Control Board, and the California Integrated Waste Management Board. The Secretary for Environmental Protection then takes each of the four respective agency lists and forms one list, referred to as the Hazardous Waste and Substances Site List – Site Cleanup (Cortese List), which is made available to every city and/or county in California (CalEPA 2020b).

California Occupational Safety and Health Administration

Cal/OSHA is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 California Code of Regulations [CCR] Sections 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

California Hazardous Waste Control Law

The California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) is administered by CalEPA to regulate the management of hazardous wastes. While the California Hazardous Waste Control Law is generally more stringent than the Resource Conservation and Recovery Act, until EPA approves the California Hazardous Waste Control Program (which is charged with regulating the generation, treatment, storage, and disposal of hazardous waste), both the state and federal laws apply in California. The Hazardous Waste Control Law lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

California Accidental Release Prevention Program

Similar to the Federal Risk Management Program, the California Accidental Release Prevention Program includes additional state requirements and an additional list of regulated substances and thresholds. The regulations of the program are contained in California Code of Regulations Title 19, Division 2, Chapter 4.5. The intent of the California Accidental Release Prevention Program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, minimize the damage if releases do occur, and satisfy community right-to-know laws.

California Health and Safety Code

The handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95, of the California Health and Safety Code. Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a hazardous materials business plan. Hazardous materials business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Chapter 6.95 of the California Health and Safety Code establishes minimum statewide standards for hazardous materials business plans.

In addition, in the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by the California Health and Safety Code, facilities are also required to prepare a risk management plan and California accidental release plan. The risk management plan and California accidental release plan provide information on the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts (California Health and Safety Code, Chapter 6.95).

Title 24 California Building Standards Code

California Building Code

Part 2 of Title 24 of the California Building Standards Code contains the California Building Code. Chapter 7A of the California Building Code regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a fire hazard area. Fire hazard areas as defined by the California Building Code include areas identified as a Fire Hazard Severity Zone (FHSZ) within a State Responsibility Area or a wildland–urban interface fire area. The purpose of Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of structures located in a fire hazard area to resist the intrusion of flames or burning embers projected by a wildfire, and to contribute to a systematic reduction in structural losses from a wildfire. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in Chapter 7A.

California Fire Code

Part 9 of Title 24 of the California Building Standards Code contains the California Fire Code (CFC), which incorporates by adoption the International Fire Code with necessary California amendments. The purpose of the CFC is to establish the minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. Chapter 49 of the CFC contains minimum standards for development in the wildland–urban interface and fire hazard areas.

The CFC and Office of the State Fire Marshal provide regulations and guidance for local agencies in the development and enforcement of fire safety standards. The CFC is updated and published every 3 years by the California Building Standards Commission. The 2016 CFC took effect on January 1, 2017, and the 2019 CFC took effect on January 1, 2020.

California Code of Regulations, Title 14, Division 1.5

California Code of Regulations Title 14, Division 1.5, establishes the regulations for the California Department of Forestry and Fire Protection (CAL FIRE) and is applicable in all State Responsibility Areas—areas where CAL FIRE is responsible for wildfire protection. Any development in State Responsibility Areas must comply with these regulations. Among other things, Title 14 Section 1270, et seq. establishes minimum standards for emergency access, fuel modification, setback to property line, signage, and water supply.

California Emergency Services Act

Under the Emergency Services Act (California Government Code, Section 8550 et seq.), the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the plan, which is administered by the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the EPA, California Highway Patrol, Regional Water Quality Control Boards (RWQCBs), air quality management districts, and county disaster response offices.

South Coast Air Quality Management District – Rule 1403

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

Local

City of Sierra Madre Municipal Code

Title 15, Chapter 15.04.030

Title 15, Chapter 15.04.030 of the City of Sierra Madre Municipal Code (SMMC) contains an amendment to Section 702A of the 2019 California Building Code to include additional requirements for buildings or structures constructed within the Very High Fire Hazard Severity Zone within the City. Building or structures erected, constructed, moved within or into the very high fire hazard severity zone shall meet the requirements of this section as follows:

1) Exterior walls of all buildings shall be of one-hour, fire-resistive construction. Exterior glass in such walls shall be double-glazed. Wood shake shingles being used as an exterior wall covering shall be treated with an approved fire-retardant chemical.
2) Roof soffits (including eaves), open patios, carports, porches, unenclosed underfloor areas and all open structures, attached or detached, shall be protected on the under side with materials as approved for one-hour fire-resistive construction or shall be of incombustible materials throughout.

Exceptions:

a) Asphalt composition shingles with Class "B" rating.
b) When in the opinion of the Building Official, no material increase in fire hazard will occur, additions not exceeding twenty-five percent (25%) of the existing square footage over the life of the building, may be covered with the same materials used on the existing building.
c) Any roof covering conforming to the specifications of the Underwriters Laboratory (UL) for Class "A" roof covering as published in the Underwriters Laboratory "List of Fire Protection Equipment and Materials" shall be considered a "fire-retardant" roof covering.

Title 15, Chapter 15.24

SMMC Title 15, Chapter 15.24 contains the CFC, 2019 Edition. The CFC shall be enforced by the bureau of fire prevention in the fire department of the city which is established and which shall be operated under the supervision of the chief of the fire department. Local amendments to the 2019 CFC that shall be incorporated into the SMMC and serve as requirements for emergency planning and preparedness (Section 15.24.070).

City of Sierra Madre Local Hazard Mitigation Plan

The City is in the process of preparing a Local Hazard Mitigation Plan (LHMP) and a draft was released for public review in February 2020. The LHMP includes a broad range of activities designed to protect homes, schools, public buildings and critical facilities. The purpose of a LHMP is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the City. The LHMP includes risk assessment and mitigation strategies for hazards including earthquakes, flooding, windstorms, wildfires, landslides, and utility related events such as power outages (City of Sierra Madre 2020).

Airport Land Use Compatibility Plan–County of Los Angeles

The purpose of Airport Land Use Compatibility Plan (ALUCP) is to protect the public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public use airports. The Airport Land Use Commission (ALUC) is also concerned with airport activities that may adversely affect adjacent areas and nearby land use that may interfere with airport operations. The County-wide ALCUP applies to the 11 general aviation airports, including the San Gabriel Valley Airport (formerly the El Monte Airport), which is the closest airport to the project site (County of Los Angeles 2004).

City of Sierra Madre General Plan

The City of Sierra Madre General Plan includes the following objectives and policies relevant to the proposed project with regard to hazards and hazardous materials (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Chapter Two – Resource Management

Objective R20: Properly disposing toxic and hazardous waste.

Chapter Three – Hazard Prevention

Objective Hz1: Providing adequate service levels of fire protection that meets the needs of Sierra Madre residents, businesses and visitors.

Objective Hz2: Providing adequate fire protection necessary for existing and future development.

Policy Hz2.3: Continue to require review of building plans by a Fire Captain.

Policy Hz2.5: Assess the impacts of incremental increases in development density and related traffic congestion on fire hazards and emergency response time, and ensure through the development review process that new development will not result in a reduction of fire protection services below acceptable levels.

Policy Hz2.6: Continue to require that new development provides adequate hydrants and show sufficient evidence that there is adequate water supply/fire flow and that it is available to accommodate the fire protection needs of new construction.

Policy Hz2.8: Develop vegetation management plans that manage chemise and chaparral to ensure adequate firebreaks, to provide adequate access for fire protection water systems, and access for firefighting.

Objective Hz4: Addressing emergency operations and disaster preparedness as a priority.

Objective Hz5: Limiting fire hazard through brush and weed abatement.

Policy Hz5.1: Mandate annual brush removal from April to June.

4.9.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to hazards and hazardous materials are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hazards and hazardous material would occur if the project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
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.
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
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 result, would it create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.9.4 Project Design Features

The following project design feature (PDF) would be implemented as part of the proposed project and would be applicable to hazards and hazardous materials:

PDF-WF-1 The proposed project shall comply with the requirements outlined in the Fire Protection Plan (FPP) (Appendix F2) during construction and operations.

4.9.5 Impacts Analysis

1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction Impacts

Construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. However, hazardous materials are highly regulated in California, including the methods by which they are transported, used, and stored. All such uses of these substances would be subject to applicable and required regulatory controls as described above under Section 4.9.2. The proposed project would be required to comply with all applicable federal, state, and local standards related to hazardous materials and wastes, such as controls on use, handling, storage, transportation, and disposal. Specifically, handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95, of the California Health and Safety Code. Additionally, construction is temporary and use of these materials would cease upon completion. The use of these materials for their intended purpose would not pose a significant risk to the public or environment. Therefore, impacts would be **less than significant** during construction.

Operational Impacts

Once project construction is complete, the transport, use, or disposal of hazardous materials would be limited to consumer products such as household cleaning products, landscaping chemicals and fertilizers, and other substances associated with household and recreation (neighborhood park) uses. As discussed in the City's General Plan, the City maintains a Household Hazardous Waste Element which outlines strategies and planning to eliminate household hazardous wastes from the City's waste stream. City residents are provided with opportunities to safely dispose of common household goods that are not allowed into the traditional waste stream. Items such as light bulbs, batteries, used oil, electronic waste, and certain solvents and cleaners are dangerous to the environment and prohibited from landfills. The City works closely with the County of Los Angeles to create and maintain programs to collect and safely dispose of such waste. Once a year, the City hosts a County-sponsored Household Hazardous Waste Roundup at the Mariposa Parking Lot. The event accepts the hazardous waste at no charge to the resident (City of Sierra Madre 2015).

Although the proposed project would result in the increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in

accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore, impacts would be **less than significant** during operation.

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?

Construction Impacts

As discussed under Threshold 1, construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. However, hazardous materials are highly regulated in California, including the methods by which they are transported, used, and stored. Compliance with applicable regulations would reduce potential for reasonably foreseeable upset and accident of such hazardous substances during construction. Additionally, construction is temporary and use of these materials would cease upon completion.

As discussed above under Section 4.9.1, Existing Conditions, a Phase I and Phase II ESA was prepared for the proposed project. The Phase I ESA determined that the project site was historically an agricultural use and that a former gasoline UST was located just north of the northeast corner of the project site. As part of the Phase I, a visit to the project site and its vicinity was conducted by Stantec in May 2020. The site reconnaissance focused on observation of current conditions and observable indications of past uses and conditions of the project site that may indicate the presence of RECs. The reconnaissance of the project site was conducted on foot by Stantec. During site reconnaissance, no hazardous substances or petroleum products were identified. Additionally, no evidence of USTs or aboveground storage tanks (ASTs) was identified on the project site.

During preparation of the Phase II ESA, Stantec conducted a subsurface assessment to address the RECs identified during the Phase I ESA, including the historical agricultural use and former gasoline UST just north of the northeast corner of the project site as described in Section 4.9.1. The Phase II included eight composite samples (COMP-1 through COMP-8) from 30 soil borings, taken to assess the historical agricultural use, and two soil vapor borings (SV01 and SV02) in close proximity to the former UST at approximately 5 feet below ground surface (bgs) (see Figure 4.9-1). Composite soil samples were collected at 1 foot and 3 feet. The shallow composite samples were analyzed for organochlorine pesticides by EPA Method 8081A and arsenic/lead by EPA Method 6010B. The 3-foot composite soil samples were placed on hold, pending results of the shallow soil sample. Two soil vapor samples (SV01 and SV02) were analyzed for VOCs by EPA methodology as described in Appendix F1. Subsurface soil vapor probe installation was performed in accordance with the July 2015 DTSC "Advisory - Active Soil Gas Investigations" (DTSC Advisory). Results from the soil and soil vapor sampling are summarized below (Appendix F1).

Agricultural Assessment

No organochlorine pesticides were detected in any of the soil samples collected from the areas of historical agricultural activities. Lead was detected ranging in concentration between 9.9 and 32 milligrams per kilogram (mg/kg). These concentrations are well below the EPA Regional Screening Level (RSL) for residential use of 480 mg/kg, and also below the DTSC Human and Ecological Risk Office (HERO) residential screening level of 80 mg/kg for lead. Arsenic was detected at concentrations ranging from 3.7 mg/kg up to 5.8 mg/kg. These concentrations are above the EPA RSL for residential use of 0.68 mg/kg, but within the southern California regional background levels of 0.6 to 11.0 mg/kg (Appendix F1).

The reported concentrations of lead and arsenic related to the historic agricultural activities at the project site are below residential screening criteria or within naturally occurring background range. Given these arsenic and lead concentrations, along with the absence of organochlorine pesticides, the historic agricultural use of the project site is not considered a REC and Stantec recommended no further investigation regarding this issue (Appendix F1).

Former Gasoline UST

Various VOCs were detected in soil vapor during this investigation. Low levels of fuel-related VOCs, including but not limited to acetone, benzene, chloroform, chloromethane, dichlorodifluoromethane, ethylbenzene, isopropanol, tert-butyl alcohol (TBA), toluene, trichloroethene, and xylenes, were detected along the northern edge of the project site at concentrations below the risk-based screening levels for residential land use. Therefore, the former gasoline UST is not considered a REC to the project site and no further assessment or action is warranted (Appendix F1).

Conclusion

Based on the findings of the Phase I and Phase II ESAs, including the review of historical records, aerial photographs, environmental records/database search, and the collection of soil and soil vapor samples and subsequent testing, no evidence of RECs in connection to the project site were revealed and no further assessment was determined to be warranted. As such, the proposed project would not 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 due to the historical agricultural use or former UST north of the northeast corner of the project site. Impacts would be **less than significant** during construction.

Operational Impacts

As discussed under Threshold 1, once project construction is complete, the transport, use, or disposal of hazardous materials would be limited to consumer products such as household cleaning products, landscaping chemicals and fertilizers, and other substances associated with household and recreation (neighborhood park) uses. Furthermore, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials, reducing the potential for reasonably foreseeable upset and accident of such hazardous substances during construction.

Further, the reported concentrations of lead and arsenic related to the historic agricultural activities at the project site are below residential screening criteria or within naturally occurring background range, as described under Construction Impacts above. Additionally, with regard to the former UST, low levels of fuel-related VOCs were detected along the northern edge of the project site at concentrations below the risk-based screening levels for residential land use. Therefore, impacts associated with the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during operation of the project, including due to the historical agricultural use or former UST, would be **less than significant**.

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?*

As discussed in Section 4.9.1, the closest schools to the project site include the Don Benito Fundamental School, located approximately 0.33 miles west of the project site; the Alverno Heights Academy, located 0.3 miles south of the project site; and the Sierra Madre Elementary School, located approximately 0.5 miles southeast of the project site. None of these schools are located within 0.25 miles of the project site and no schools are proposed within

0.25 miles of the project site. Nevertheless, as discussed above under Threshold 1, the proposed project would result in less-than-significant impacts related to the routine transport, use, or disposal of hazardous materials. As discussed above under Threshold 2, the proposed project would result in less-than-significant impacts related to the reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Although the proposed project would involve the transport and use of commonly used hazardous substances during construction and operation, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. **No impact** would occur.

4. ***Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***

A regulatory agency database search report was obtained from Environmental Data Resources Inc., a third-party environmental database search firm. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix F1.

Because the project site and Mater Dolorosa Retreat Center site share an address, the two sites were concurrently were identified in the following environmental database reports: the Hazardous Waste Tracking System (HWTS), HAZNET, Los Angeles County Hazardous Materials System (HMS) environmental databases. The listings were related to commercial and institutional building construction in 2014, disposal of asbestos containing waste in 1992 and 2013, and disposal of waste oil/mixed oil in 1992. Because no development is currently present at the project site, these listing most likely occurred within the Mater Dolorosa Retreat Center site, located north of the project. Given there are no violations or indication of a release, these listings are not considered an environmental concern to the proposed project.

Furthermore, as discussed above under Threshold 2, the Phase I and Phase II ESA determined that the reported concentrations of lead and arsenic related to the historic agricultural activities at the project site are below residential screening criteria or within naturally occurring background range. Regarding to the former UST, low levels of fuel-related VOCs were detected along the northern edge of the project site at concentrations below the risk-based screening levels for residential land use. Therefore, the project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and implementation of the proposed project would not create a significant hazard to the public or the environment. Impacts would be **less than significant**.

5. ***For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?***

As discussed in Section 4.9.1, the closest airport to the project site is the San Gabriel Valley Airport (formerly the El Monte Airport), located approximately 6 miles south of the project site. An airport land use compatibility plan (ALCUP) has not been developed for the San Gabriel Valley Airport; however, a Countywide ALUCP has been adopted for all public airports within Los Angeles County. The Countywide ALUCP includes information pertaining to the San Gabriel Valley Airport, discussed therein as the El Monte Airport. The project site is not located within the AIA of the San Gabriel Valley Airport and is therefore not subject to the policies and programs of the Countywide ALUCP. Furthermore, the project site is not located within two miles of any other airport or public use airport. As such, the

proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area. **No impact** would occur.

6. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The City has not adopted an emergency response plan or emergency evacuation plan. However, the City is in the process of preparing a Local Hazard Mitigation Plan (LHMP) and a draft was released for public review in February 2020 (City of Sierra Madre 2020). The purpose of a LHMP is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the City.

As stated in Section 4.20, the project site is within a WUI that is in an area statutorily designated an LRA VHFHSZ by CAL FIRE and the SMFD (Appendix F2). Additionally, as seen in Figure 4.9-2, the project site is designated by the City as a Very High Hazard area (City of Sierra Madre 2015). This designation does not indicate that development cannot occur safely, but does indicate that a higher level of ignition resistant construction must be implemented.

During construction of the project, a temporary increase in traffic on roadways surrounding the project site may occur due to increased truck loads or the transport of construction equipment to and from the project site during the construction period. However, all construction activities including staging would occur in accordance with City requirements (such as SMMC Chapter 17.30, which requires that streets be maintained free and clear during construction), which would ensure that adequate emergency access to the project site in the event of an emergency or evacuation order would be provided during construction of the project (see Threshold 1 in Section 4.20.5 for additional details). The proposed driveways and roadways (proposed and existing) providing access to the project site would comply with the City's roadway standards and the 2019 CFC Section 503. Additionally, all access roads would meet SMMC standards, requiring roadways to have a minimum 20-foot unobstructed width (30- and 36-foot-wide roadway surfaces are proposed) and a minimum 26-foot width within 25 feet of hydrants.

An FPP has been prepared for The Meadows at Bailey Canyon Specific Plan (Specific Plan) and included as Appendix F2 of this EIR. The FPP evaluates and identifies the potential fire risk associated with the project's land uses and identifies requirements for water supply, fuel modification and defensible space, access, building ignition and fire resistance, and fire protection systems. The FPP identifies project-specific measures to be implemented by and incorporated into the project to address potential wildfire risks, including site improvements prior to bringing lumber and combustible materials on site, ongoing/as needed fuel modification maintenance, provision of fuel modification areas around buildings, not using highly flammable plants in landscape plantings, and provision of a wildfire education program to residents and occupants. Furthermore, the proposed project would provide adequate emergency access throughout the project site in accordance with the street design requirements of the SMMC.

There are no officially adopted evacuation plans for the project area that are publicly available. The project's evacuation approach is consistent with the City's and County's evacuation approach and would not conflict. Residents would be aware of the potential for evacuations and would follow direction provided by law enforcement and fire personnel. As discussed in the FPP and Section 4.20.5 of the EIR, early evacuation for any type of wildfire emergency near the project site is the preferred method of providing for resident safety, consistent with the City's current approach. As such, each property owner would be individually responsible to adopt, practice, and implement a "Ready, Set, Go!" approach to site evacuation. The "Ready, Set, Go!" concept is widely known and encouraged by the state of California and most fire agencies. Pre-planning for emergencies, including wildfire emergencies, focuses on being prepared, having a well-defined plan, minimizing potential for errors, maintaining the site's fire protection systems, and implementing a conservative (evacuate as early as possible) approach to evacuation and site uses

during periods of fire weather extremes. Implementation of these evacuation requirements, would ensure that residents of the proposed project and nearby land uses, including the Mater Dolorosa Retreat Center and nearby residential uses, would be able to properly evacuate in the event of wildfire. During wildfire evacuations, law enforcement and fire agencies would manage the evacuation event and provide downstream intersection control, as needed, to move persons within higher threat areas to lower threat areas. Because the project and Mater Dolorosa Retreat Center would respond to evacuation orders according to provided direction, and depending on the threat level, would be aided by downstream intersection control, it is not anticipated that substantial delays to the existing population would occur. Therefore, through compliance with existing regulations and **PDF-WF-1**, which requires compliance with the FPP, the proposed project would not impair implementation of the LHMP once adopted. and because there is no officially adopted evacuation plan for the area, would therefore not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be **less than significant**.

7. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The proposed project would introduce people and structures to the project site. As discussed in Section 4.9.1 and more comprehensively in Section 4.20, the project site is located within a wildland–urban interface location that is statutorily designated as a Local Responsibility Area VHFHSZ. As such, it can be anticipated that periodic wildfires may start on, burn onto, or spot into the project site. The most common type of fire anticipated in the vicinity of the project area is a wind-driven fire from the northeast moving through the native vegetation in the Angeles National Forest (Appendix F2). A FPP has been prepared for the proposed project to identify and address potential wildfire hazards. The FPP provides guidance for vegetation maintenance, enhanced ignition-resistant construction features, and fuel modification requirements to limit wildfire risk associated with implementation of the proposed project. Additionally, all proposed buildings would comply with the CBC (Chapter 7A), which requires compliance with ignition-resistant construction standards for all projects located in a fire hazard area (see Section 4.9.2 for details), and Chapter 5 of the Wildland-Urban (WUI) Interface code. These codes were specifically developed to address structure vulnerabilities related to wildfire. The primary means for structure ignition from wildfire are direct flame impingement, radiant/convective heat, and embers. The building and WUI codes provide for defensible space to minimize the potential for direct flame impingement, for ignition resistant construction that resists ignition from radiant/convective heat, and ember resistant openings that minimize the likelihood of ember penetration. These requirements were adopted into the code requirements over years of after fire structural loss and save assessments. This process involves identifying why building burn and developing protections to minimize those ignitions. Likewise, where building exposed to wildfire did not burn, reasons why are analyzed and findings incorporated into the fire protection system that is driven by these codes. The proposed project would also include fire protection systems including fire hydrants, automatic fire sprinkler system, and fire alarm systems and residential hazard detectors which will help protect the proposed residences and provide fire response infrastructure to reduce the risks of loss, injury or death associated with a wildland fire (Appendix F2). The Sierra Madre Fire Prevention Standards and 2019 CFC require the following: static water pressure will remain above 20 psi at 2,500 gallons per minute when meeting the fire requirements for a 2-hour duration.

The FPP that has been prepared for the project describes the risks associated with a potential wildland fire and the measures that will be implemented by and incorporated into the project to minimize those risks to the extent feasible. As discussed in the FPP (Appendix F2), there are no guarantees that a given structure will not burn during extreme fire conditions. The project design features discussed in this section and Section 4.20 identified in the FPP are designed to reduce the likelihood that fire will impinge upon the proposed project or threaten its occupants/visitors. Additionally, while there are no guarantees that fire will not occur in the area or that fire will not damage property or cause harm to

persons or their property, implementation of the required enhanced construction features provided by the applicable codes and the fuel modification requirements described in the FPP will reduce the site's vulnerability to wildfire. It will also help accomplish the goal of the FPP to assist firefighters in their efforts to defend structures. As such, with compliance with existing regulations and implementation of the project design features identified in the FPP (see **PDF-WF-1**), the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Impacts would be **less than significant**.

4.9.6 Mitigation Measures

No mitigation measures would be required.

4.9.7 Level of Significance After Mitigation

No mitigation measures would be required. Impacts related to hazards and hazardous materials would be **less than significant**.

FIGURE 4.9-1

Soil and Soil Vapor Sampling Locations

The Meadows at Bailey Canyon EIR

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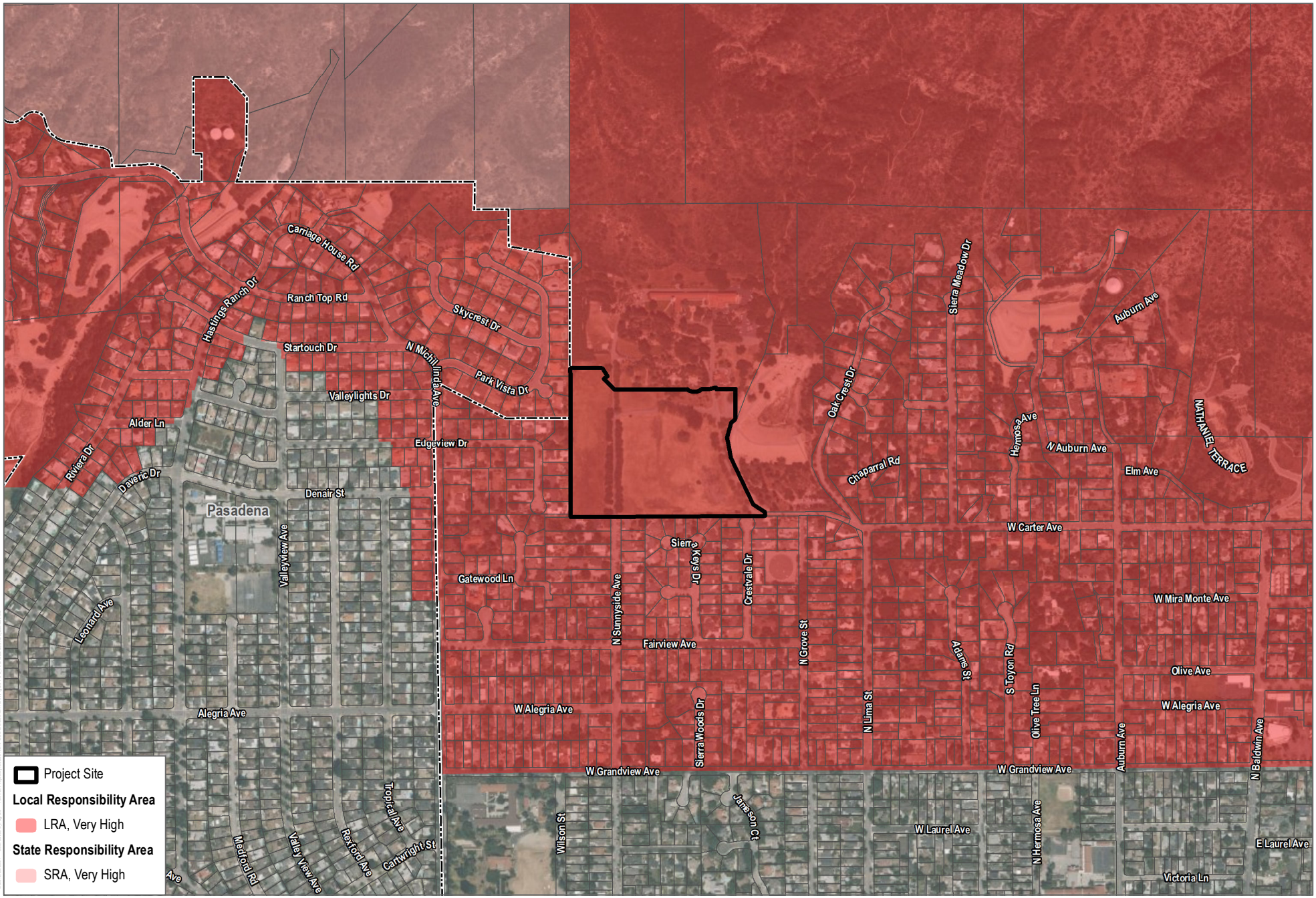

SOURCE: County of Los Angeles 2020; CalFire; Bing Maps

DUDEK

0 380 760 Feet

FIGURE 4.9-2

Fire Hazard Severity Zones

The Meadows at Bailey Canyon EIR

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4.10 Hydrology and Water Quality

This section describes the existing hydrology and water quality conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies applicable mitigation measures related to implementation of the proposed project.

4.10.1 Existing Conditions

Project Site

The project site is located within the northwestern portion of the City of Sierra Madre (City). As described in Chapter 2, Environmental Setting, of this Environmental Impact Report (EIR), the project site is located immediately south of the Mater Dolorosa Retreat Center and is bound by single-family residential areas to the west and south, and Bailey Canyon Wilderness Park to the east, and the foothills of the San Gabriel Mountains to the north of the Mater Dolorosa Retreat Center. The Bailey Canyon Debris Basin is also located to the east of the site. The Bailey Canyon Debris Basin is one of seven debris basins within the City that serves to control flood hazards associated with stormwater runoff channeled from the mouths of canyons in the northern part of the City (City of Sierra Madre 2015). The project site is located on the same parcel as the Mater Dolorosa Retreat Center, which is currently split within three different lots. A lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two southern lots that make up the project site as one lot and adjust the northern boundary of this new lot further to the north.

Hydrologic Features

Under existing conditions, the project site includes an existing Los Angeles County Flood Control District (LACFCD) 36-inch-diameter reinforced concrete pipe (RCP) storm drain, which runs east, from the adjacent private properties west of the project site, into the project site and then north to south under a portion of the existing private roadway north of North Sunnyside Avenue (see Figure 3-7, Proposed Drainage Plan, in Chapter 3, Project Description). This existing storm drain collects storm water from an existing debris basin northwest of the site and eventually discharges into Arcadia Wash, located approximately 100 feet southeast of the intersection of South Lima Street and West Orange Grove Avenue.

The project site is divided into two major drainage areas, Areas A and B, which comprise four sub-drainage areas: A-1, A-2, B-2, and B-3. These drainage areas drain via sheet flow, natural concentrated flow, and street flow to the municipal separate storm sewer system (MS4). The site's existing drainage area is divided into the following sub-drainage areas:

- Drainage Area A-1, which is approximately 1.2 acre, consists of natural land cover and partially impervious roadway. This area drains to two existing catch basins, which feed two 21-inch RCPs, located on either side of North Sunnyside Avenue. These two 21-inch pipes join the existing 36-inch storm drain and are conveyed offsite to Arcadia Wash.
- Drainage Area A-2, which is approximately 5.2 acres, consists of natural land cover and impervious roadway. Flows from this area drain to an existing 24-inch RCP which connects into the existing 36-inch storm drain at the southern edge of the project site. Flows confluence with runoff generated from

- Drainage Area A-1 and are conveyed to Arcadia Wash. Drainage Area B-2 and B-3, which are approximately 11.0 acres, consist of natural land cover and impervious roadway. Runoff flows in a southeastern direction where it discharges to Crestvale Drive via a 24-inch, above ground culvert.

The northeastern portion of the Mater Dolorosa Retreat Center, located north of the site, flows to the Bailey Canyon Debris Basin to the east and discharges into Arcadia Wash. The project site does not flow towards the Bailey Canyon Debris Basin.

Groundwater

Raymond Groundwater Basin

The project site lies completely within the Raymond Groundwater Basin, which previously provided groundwater to the City (UCLA 2020). Water to be consumed by the project uses would be provided by the Sierra Madre Water Department (SMWD), which previously sourced its water supply primarily from the Santa Anita Sub-area which is a sub-unit of the Raymond Groundwater Basin. For most of its time, the City's main source of water supply was through its groundwater. The Decreed Right of 1955 provided the City with water rights to 1,764 acre feet per year (AFY) from the Santa Anita Sub-area. The City also has the right to obtain credit for "salvage water." Salvage water is surface water percolated into the Santa Anita Sub-area minus losses for natural percolation and subsurface outflow. Salvage water credits allow the City to (annually) extract more than 1,764.0 acre-feet (AF) from the Santa Anita-Sub area. However, due to past multiple dry-year conditions, the Raymond Basin Management Board (RBMB) implemented a "500-foot" level limitation for all Decreed Rights to the Santa Anita Sub-area in 2013, which reduced well production by 95 percent. As a result, the City's adjusted right to the Santa Anita Sub-area was limited to 940 AFY. In October 2015, after five years of unprecedented drought and insufficient groundwater replenishment, the RBMB limited the amount of groundwater which the City is allowed to produce each year and authorized the use of imported water for spreading on behalf of the City. Metropolitan Water District of Southern California (MWD) entered into an agreement with the City and the San Gabriel Valley Municipal Water District (SGVMWD) to deliver up to 2,500 AFY of treated, imported water for spreading within the Santa Anita Sub-area. A new imported water connection was constructed at the Sierra Madre Spreading Grounds for the purposes of spreading to allow for additional groundwater by the City. Over the past five years, MWD has delivered 1,036 AFY to 2,044 AFY, with an average of 1,550 AFY, for spreading on behalf of the City. In addition, pursuant to this agreement, SGVMWD provides a portion of its annual State Water Project (SWP) allocation, which MWD then wheels to the City (City of Sierra Madre 2021).

Due to the "500-foot" level limitation that is in effect, the City's water rights to the Raymond Groundwater Basin are currently based on the adjusted rights to the Santa Anita Sub-area of 940.0 AFY plus any imported water spread at the Sierra Madre Spreading Grounds. Over the past five years, the City has produced 1,023 AFY to 2,387 AFY, with an average of 1,967 AFY from the Raymond Groundwater Basin (City of Sierra Madre 2021). However, with continued use of imported water, tunnel water, and any other viable sources for groundwater recharge, the City can expect the "500-foot rule" restriction to be lifted (UWMP 2021).

Main San Gabriel Groundwater Basin

The Main San Gabriel Groundwater Basin is a large groundwater basin replenished by stream runoff from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, subsurface inflow from Raymond Groundwater Basin and Puente Basin, and by return flow from water applied for overlying uses. Additionally, the Main San Gabriel Groundwater Basin is replenished with imported water. The Main San Gabriel Groundwater Basin

serves as a natural storage reservoir, transmission system and filtering medium for wells constructed therein. There are three municipal wholesale water districts overlying and/or partially overlying the Main San Gabriel Groundwater Basin, including Upper District, SGVMWD, and Three Valleys Municipal Water District (TVMWD).

The Main San Gabriel Groundwater Basin has a freshwater storage capacity of about 8.7 million AF when the Key Well groundwater elevation is at 329.1 feet, of which about 125 feet of elevation change, or about 1,000,000 AF, has been used for historical basin operations. Local runoff is stored in a series of reservoirs operated by the Los Angeles County Department of Public Works (LACDPW) and diverted into spreading grounds to replenish the groundwater supply. Groundwater recharge occurs every year and is exhibited as increasing water levels.

The City is a party to the Main Basin Judgment, which means the City can pump from the Main San Gabriel Groundwater Basin. The Main Basin Judgment does not restrict the quantity of groundwater that can be produced but provides for a Replacement Water assessment for production in excess of water rights. Historically, the Main San Gabriel Groundwater Basin did not have wells. However, the City has proposed constructing a new well jointly with the City of Arcadia. The Main San Gabriel Groundwater Basin has been adjudicated and management of the local water resources within the Main San Gabriel Groundwater Basin is based on that adjudication. Management of the water resources in the Main San Gabriel Groundwater Basin is based upon Watermaster services under two Court Judgments: San Gabriel River Master and Main Basin Watermaster. Under the Main Basin Adjudication, the City does not have pumping rights but can pump from the Main San Gabriel Groundwater Basin. Although there is no limit on the quantity of water that may be extracted by parties to the Main Basin Adjudication, including the City, groundwater production in excess of a Party's water right, or its proportional share (pumper's share) of the Operating Safe Yield, requires purchase of untreated imported water to recharge the Main San Gabriel Basin. The City plans to obtain groundwater produced from the Main San Gabriel Basin and delivered through an inter-connecting pipeline with the City of Arcadia. If the City obtains any water from the Main San Gabriel Groundwater Basin, replacement water may be purchased from SGVMWD to recharge the Main San Gabriel Groundwater Basin. Any water pumped from Main San Gabriel Groundwater Basin wells on behalf of the City will be counted toward the City. Over the past five years, the City has not obtained any groundwater from the Main San Gabriel Groundwater Basin (through the City of Arcadia) (City of Sierra Madre 2021).

Raymond Basin Judgment

To ensure the efficient use and supply of groundwater in the Raymond Groundwater Basin, water resources is managed by the Raymond Basin Judgment (RBJ). The RBJ is administered by the RBMB and is comprised of various participating parties, including the City, to manage and preserve groundwater levels of the Raymond Groundwater Basin. Under provisions of the 1984 RBJ (Section VI [3]), pumping is restricted when groundwater levels in the Santa Anita Sub-area drop below 500 feet above mean sea level. Significant threats on the City's water supply include increase in population, overdevelopment, and on-going drought conditions. The drought has driven home the point that Southern California is an arid region which does not have an adequate local water supply to meet current water demands, and that supplies of imported water cannot be counted upon in dry periods or in the event of a disaster (City of Sierra Madre 2015).

4.10.2 Relevant Plans, Policies, and Ordinances

Federal

Clean Water Act

The federal Clean Water Act (CWA) was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's navigable waters. The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) are responsible for enforcing water quality standards within the state. As mandated by Section 303(d) of the CWA, the SWRCB maintains and updates a list of "impaired water bodies" (i.e., water bodies that do not meet state and federal water quality standards). This list is known as the Section 303(d) list of impaired water bodies. The state is required to prioritize waters/watersheds for development of total maximum daily load (TMDL) regulations. Section 303(d) of the CWA bridges the technology-based and water-quality-based approaches for managing water quality and requires each state to make a list of waters that are not attaining standards after implementation of the technology-based limits. For waters on this list (and where the U.S. Environmental Protection Agency [EPA] administrator deems it appropriate), the states develop TMDLs that are established at the level necessary to implement applicable water quality standards. A TMDL must account for all sources of pollutants that cause the water to be listed. Federal regulations require that TMDLs, at a minimum, account for contributions from point sources and nonpoint sources. This information is compiled in a list and submitted to the EPA for review and approval. Section 303(c)(2)(b) of the CWA requires states to update the TMDLs every 3 years (SWRCB 2019).

Section 319 of the CWA mandates specific actions for the control of pollution from nonpoint sources. The EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and programs such as the National Pollutant Discharge Elimination System (NPDES) program, to the SWRCB and the RWQCBs.

National Pollutant Discharge Elimination System Permit

The NPDES permit system was established by the CWA to regulate both point-source discharges and nonpoint-source discharges. Nonpoint pollution often enters receiving waters in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the EPA must consider in setting effluent limits for priority pollutants.

A detailed discussion of the NPDES program is provided under the discussion of state regulations in this section, since the authority to implement the NPDES program has been delegated to the SWRCB and RWQCBs.

Federal Antidegradation Policy

The federal Antidegradation Policy (40 CFR Section 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to this policy, state antidegradation policies and implementation methods will, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the federal Antidegradation Policy.

National and State Safe Drinking Water Acts

The federal Safe Drinking Water Act, established in 1974, is administered by the EPA and sets drinking water standards throughout the country. The drinking water standards established in the Act, as set forth in the Code of Federal Regulations (CFR), are referred to as the National Primary Drinking Water Regulations (Primary Standards; 40 CFR Part 141), and the National Secondary Drinking Water Regulations (Secondary Standards; 40 CFR Part 143). According to the EPA, the Primary Standards are legally enforceable standards that apply to public water systems. The Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The EPA recommends the Secondary Standards for water systems but does not require systems to comply. California passed its own Safe Drinking Water Act in 1986 that authorizes the state's Department of Health Services to protect the public from contaminants in drinking water by establishing maximum contaminant levels (as set forth in the California Code of Regulations [CCR], Title 22, Division 4, Chapter 15) that are at least as stringent as those developed by the EPA, as required by the federal Safe Drinking Water Act.

State

Responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The RWQCBs develop and implement water quality control plans that consider regional beneficial uses, water quality characteristics, and water quality problems. The project site is located within the jurisdiction of the Los Angeles RWQCB.

All projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of waste discharge requirements (WDRs) by the RWQCBs. WDRs related to land and groundwater (i.e., non-NPDES WDRs) regulate discharges of privately or publicly treated domestic wastewater and process/wash-down wastewater. WDRs for discharges to surface water also serve as NPDES permits, which are further described in this section.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including surface water and groundwater) and directs the RWQCBs to develop regional water quality control plans. Section 13170 of the California Water Code authorizes the SWRCB to adopt water quality control plans on its own initiative.

Waste Discharge Requirements

All dischargers of waste to waters of the state are subject to regulation under the Porter-Cologne Water Quality Control Act, and the requirements for WDRs is incorporated into the California Water Code. This includes point-source and nonpoint-source dischargers. All current and proposed nonpoint-source discharges to land must be regulated under WDRs, waivers of WDRs, a water quality control plan prohibition, or some combination of these administrative tools. Discharges of waste directly to state waters are subject to an individual or general NPDES permit, which also serves as WDRs. The RWQCBs have primary responsibility for issuing WDRs to cover a category of discharges. WDRs may include effluent limitations or other requirements that are designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions. Violations of WDRs may be addressed by issuing Cleanup and Abatement Orders or Cease and Desist Orders, assessing administrative civil liability, or seeking imposition of judicial civil liability or judicial injunctive relief.

National Pollutant Discharge Elimination System Permits

The NPDES permit system was established by the CWA to regulate both point-source discharges and nonpoint-source discharges. Nonpoint pollution often enters receiving waters in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the EPA must consider in setting effluent limits for priority pollutants.

Construction General Permit

The SWRCB permits all regulated construction activities under Order No. 2009-009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ. The order requires that, prior to beginning any construction activity, the permit applicant obtain coverage under the Construction General Permit by preparing and submitting to the SWRCB a Permit Registration Document that includes a Notice of Intent and appropriate fee. The SWRCB may issue a Construction General Permit or an Individual Construction Permit that would contain more specific permit provisions. Individual Construction Permits replace Construction General Permit regulations and provisions, if issued. Additionally, coverage would not occur until an adequate Stormwater Pollution Prevention Plan (SWPPP) has been prepared. A separate Notice of Intent is submitted to the SWRCB for each construction site.

SWRCB adopted the Construction General Permit on September 2, 2009, and it became effective on July 1, 2011. In addition, 2010-0014-DWQ was adopted on November 16, 2010, and became effective on February 14, 2011. The amendment provided text changes to the fact sheet, Conditions for Permit Coverage, Special Provisions, Electronic Signature, and Certification Requirements of Order No. 2009-009-DWQ. Similarly, 2012-0006-DWQ was adopted on July 17, 2012. The amendment provided updated text changes to the Fact Sheet, primarily with respect to replacing numeric effluent limitations with narrative effluent limitations for Risk Level 3 and Linear Underground/Overhead Project Type 3 construction sites (with the exception of Active Treatment Systems).

Construction activities subject to the NPDES Construction General Permit include clearing, grading, and disturbances to the ground (e.g., stockpiling or excavating), which result in soil disturbances of at least 1 acre of total land area. Because construction of the project would cumulatively disturb more than 1 acre, all improvements and development activities would be subject to these permit requirements, and the project would be required to prepare a SWPPP. The SWPPP has two main objectives: to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges, and to describe and ensure the implementation of best management practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater discharges.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package—Assembly Bill 1739 (Dickinson), Senate Bill 1168 (Pavley), and Senate Bill 1319 (Pavley)—collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over drafted basins, sustainability should be achieved by 2040. For the remaining high- and medium-priority basins, 2042 is the deadline. Through SGMA, the California Department of Water Resources provides ongoing support to local agencies through guidance, financial assistance, and technical assistance. SGMA empowers local agencies to form Groundwater

Sustainability Agencies to manage basins sustainably and requires those Groundwater Sustainability Agencies to adopt Groundwater Sustainability Plans for crucial groundwater basins in California.

California Water Code, Section 12924

The California Department of Water Resources, in conjunction with other public agencies, conducts investigations of the state's groundwater basins. The Department of Water Resources identifies the state's groundwater basins on the basis of geological and hydrologic conditions and with consideration of political boundary lines whenever practical. The Department of Water Resources also investigates existing general patterns of groundwater extraction and groundwater recharge within those basins to the extent necessary to identify basins that are subject to critical conditions of overdraft (DWR 2016).

Local

Los Angeles Regional Water Quality Control Board Basin Plan

The Los Angeles RWQCB is responsible for the protection of the beneficial uses of waters within the coastal watersheds of Los Angeles and Ventura counties, including the project site. The Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (i) designates beneficial uses for surface and ground waters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan (RWQCB 2014).

Sierra Madre Urban Water Management Plan

The Urban Water Management Plan (UWMP) provides the Department of Water Resources (DWR) with information on present and future water resources and demands and provides an assessment of the water resource needs of Sierra Madre. Specifically, this UWMP will provide water supply planning for a 25-year planning period in 5-year increments. The UWMP will identify water supplies for existing and future demands, quantify water demands during normal year, single-dry year, and multiple-dry years, and identify supply reliability under the three hydrologic conditions (UWMP 2021).

City of Sierra Madre General Plan

The Resource Management Element of the City's General Plan contains the following goals and objectives potentially relevant to the project (City of Sierra Madre 2015). Please see Section 4.11, Land Use and Planning, for a consistency analysis with these policies

Goal 1: Conservation of the City's water resources.

Goal 5: Meet or exceed water quality objectives.

Objective R12: Optimizing the use of water resources.

Policy R12.3: Develop new ways to capture and percolate storm water.

Objective R14: Ensuring adequate water availability for future growth in the City.

Objective R15: Conserving water during times of drought.

Objective Hz6: Addressing potential flooding and landslide hazards on public and private property.

Policy Hz6.1: Require that all new development incorporates sufficient measures to mitigate flood hazards, including the design of containment systems to capture stormwater runoff on-site, and site grading that minimizes stormwater runoff from increased impervious surfaces, thereby addressing impacts to on-site structures and adjacent properties.

Policy Hz6.2: Require that the landscape of open space areas provide the maximum permeable surface area to reduce site runoff, and prohibit the paving of a majority of these areas.

Objective Hz8: Maintaining adequate infrastructure to prevent flooding hazards.

Policy Hz8.1: Require that residential tract developers be responsible for construction of drainage/storm drain systems improvements that are compatible with City and County systems within or adjacent to their project site.

Policy Hz8.2: Install required public storm drainage improvements.

City of Sierra Madre Municipal Code

Per Section 7.08.030 of the Sierra Madre Municipal Code, prior to the issuance of a building permit for a new development project, the City shall evaluate the project using the guidelines and BMP list approved by the California RWQCB, Los Angeles Region and erosion and grading requirements of the City building official or director of public works to determine: (1) its potential to generate the flow of pollutants into the municipal storm sewer system both during and after construction; and (2) how well the urban runoff mitigation plan for the project meets the goals of this title. Each plan will be evaluated on its own merits according to the particular characteristics of the project and the site to be developed.

4.10.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to hydrology and water quality are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hydrology and water quality would occur if the project would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
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:
   a. result in substantial erosion or siltation on or off site;

b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;
c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
d. impede or redirect flood flows.

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.10.4 Project Design Features

The following project design feature (PDF) would be implemented as part of the proposed project and would be applicable to hydrology and water quality:

PDF-UTL-1 Prior to issuance of a building unit, the project applicant will provide funds to the City to purchase supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD) in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period. This purchase would be in addition to the City's existing agreement with SGVMWD, providing for the purchase of supplemental imported water.

PDF-GEO-7 **Fill Slopes.** Fill slopes activities shall comply with the following:

- Gradient: All fill slopes shall be designed at a gradient of 2:1 or less.
- Slope Face - Compaction Criteria: The contractor shall be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses and stabilization fills. This may be achieved by overbuilding the slope a minimum of five feet, and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction. If the method of achieving the required slope compaction selected by the contractor fails to produce the necessary results, the contractor should rework or rebuild such slopes until the required degree of compaction is obtained. Slope testing shall include testing the outer six inches to three feet of the slope face during and after placement of the fill. In addition, during grading, density tests will be taken periodically on the flat surface of the fill three to five feet horizontally from the face of the slope.
- Slope Face - Vegetation: All fill slopes shall be planted or protected from erosion by methods specified in the geotechnical report, or required by the controlling governmental agency.

PDF-GEO-9 **Construction Considerations.** Construction activities shall comply with the following:

- Erosion Control: Erosion control measures, when necessary, shall be provided by the contractor during grading and prior to the completion and construction of permanent drainage controls.
- Compaction Equipment: It is also the contractor's responsibility to have suitable and sufficient compaction equipment on the project site to handle the amount of fill being placed and the type of fill material to be compacted. If necessary, excavation equipment shall be shut down to permit completion of compaction in accordance with the recommendations contained herein.

Sufficient watering devices/equipment shall also be provided by the contractor to achieve optimum moisture content in the fill material.

- Final Grading Considerations: Care shall be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property.

4.10.5 Impacts Analysis

1. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction

Construction activities associated with the project could result in wind and water erosion of the disturbed area leading to sediment discharges. Additionally, construction would involve the use of oil, lubricants, and other chemicals that could be discharged from leaks or accidental spills. These potential sediment and chemical discharges during construction would have the potential to impact water quality in receiving water bodies. Construction of the project would result in more than 1 acre of land disturbance; therefore, the project would be required to prepare and implement a SWPPP, in accordance with the Statewide Construction General Permit. This requires implementation of water quality BMPs to ensure that water quality standards are met and that stormwater runoff from the construction work areas does not cause degradation of water quality in receiving water bodies. Some of these BMPs would include use of silt screening or fiber filtration rolls, appropriate handling and disposal of contaminants, litter control and pick up, and vehicle and equipment repair and maintenance in designated areas. Implementation of SWPPP requirements would reduce potential water quality impacts associated with construction to **less than significant.**

Operations

During operation, the project would introduce 42 detached single-family residential units and approximately 3.04-acre dedicated neighborhood park, within the 17.30-acre project site, resulting in the addition of more impervious area to the site, which would result in more surface runoff. However, as part of project site improvements, the project would include development of two storm drain networks, in order to properly convey flows from the western and eastern portions of the site (see Figure 3-7). The increase in impervious area would result in reduced percolation and groundwater recharge as well as more surface runoff. An increase in surface runoff would increase the potential for violation of water quality standards or waste discharge requirements. As discussed in Section 4.10.1, Existing Conditions, the project is located within the Los Angeles RWQCB jurisdiction that oversees water quality in the Los Angeles region. The Los Angeles RWQCB has prepared a Basin Plan in order to preserve and enhance water quality and protect the beneficial uses of all regional waters. The Basin Plan designates beneficial uses for surface and ground waters, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations (RWQCB 2014). The RWQCB also regulates discharges from MS4 in the Los Angeles region under an NPDES MS4 Permit. The MS4 Permit for the County of Los Angeles was adopted in November 2021 and became effective on December 28, 2012. The proposed project would be required to comply with the MS4 permit that regulates stormwater and non-stormwater discharges and the requirements of the Basin Plan, which includes implementation

of BMPs to reduce water quality impacts. The structural BMPs implemented for the proposed project include the proposed 63,500-cubic-foot retention storage gallery, which would consist of approximately 2,400 linear feet of 60-inch diameter perforated pipe surrounded by gravel bed and would be consistent with the Cities Low-Impact Development (LID) Plan requirements found within Section 15.58.080, LID plan requirement, of the Sierra Madre Municipal Code. The retention storage gallery would be approximately 24 inches below ground and would promote water quality treatment through infiltration. Stormwater that is not retained in the underground storage gallery retention system or infiltrated into the ground would be routed to the southeast corner of the proposed park and exit to Crestvale Drive via a surface culvert and to the MS4 downstream to Arcadia Wash. With implementation of these project site improvements as well as compliance with all existing water quality regulations, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Impacts to water quality or waste discharge requirements would be **less than significant** during operations.

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?

As discussed in Section 4.10.1, above, the Raymond Groundwater Basin underlies the entire project site (UCLA 2020). Water to be consumed by the project would be provided by the SMWD, which previously sourced its water supply primarily from the Santa Anita Sub-area, which is a sub-unit of the Raymond Groundwater Basin. As discussed in Section 4.10.1, above, beginning October 2013, well production was reduced by 95 percent due to low groundwater levels of the Raymond Groundwater Basin. MWD entered into an agreement with the City and SGVMWD to deliver treated, imported water for spreading within the Santa Anita Sub-area, in order to allow for additional groundwater by the City. Pursuant to this agreement, SGVMWD also provides a portion of its annual SWP allocation which MWD then wheels to the City (City of Sierra Madre 2021). Therefore, the City receives water supplies from groundwater, imported water, and tunnel water (see Section 4.19.2, for further discussion related to the City's existing water supply). Water supply to the City would primarily be provided through imported water until the Raymond Groundwater Basin returns to a sufficient level of groundwater.

As described in Section 4.19.5, the proposed project would result in an increased water demand of approximately 11.91 AFY, resulting in approximately 0.51% of SMWD's projected water demand for both 2040 and 2045 as well as 0.02% of SGVMWD's supplies. As described in detail in Section 4.19.5 of this EIR, the total projected water supplies available to SMWD and SGVMWD during normal, single-dry, and multiple-dry years would be sufficient to meet the projected water demands for the proposed project. As discussed in Section 4.19, Utilities and Services Systems, of this EIR, the project would not use groundwater during construction.

Although a portion of the project's water demand could come from the Raymond Groundwater Basin, to ensure the efficient use and supply of groundwater in the Raymond Groundwater Basin, water resources is managed by the RBJ (see Section 4.10.1, above). The RBJ is administered by the RBMB and is comprised of various participating parties, including the City, to manage and preserve groundwater levels of the Raymond Groundwater Basin. Under provisions of the 1984 RBJ (Section VI [3]), pumping is restricted when groundwater levels in the Santa Anita Sub-area drop below 500 feet above mean sea level (City of Sierra Madre 2015). In addition, in order to meet future water demands, the City plans to implement future water projects focused on local groundwater supplies. This includes construction of a main basin well and transmission pipeline and rehabilitation groundwater wells to improve groundwater production. In addition, as discussed in Section 4.10.1, MWD entered into an agreement with the City and SGVMWD to deliver up to 2,500 AFY of treated, imported water for spreading within the Santa Anita Sub-area. A new imported water connection was constructed at the Sierra Madre Spreading Grounds for the purposes of spreading to allow for additional groundwater by the City (City of Sierra Madre 2021). Therefore,

because the project would not result in a significant increase demand of the SMWD's or SGVMWD's existing supplies, and because both SMWD and SGVMWD have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, it is not anticipated that the project would substantially decrease groundwater supplies.

Lastly, to achieve a net-zero impact on local water supplies, the project Applicant would provide funds to the City to increase the City's water supply through the purchase of additional supplemental water from the SGVMWD. The amount of supplemental water purchased from the SGVMWD would be equal to all anticipated indoor and outdoor water demands for the proposed residential units over a 50-year period (see **PDF-UTL-1** in Sections 3.3.13 and 4.10.4). This purchase of additional supplemental water would offset the demand placed on existing supplies, including groundwater supplies, and would be in addition to the City's existing agreement with SGVMWD, which allows the City to purchase up to 2,500 AFY of supplemental water from SGVMWD. The additional supplemental water procured by the City as a result of the project would be stored in the Main San Gabriel Groundwater Basin and would be available to serve the public, as needed. In addition, although the project would introduce impervious surfaces on-site, the proposed open space on site, which includes the 3.04-acre dedicated neighborhood public park at the southernmost portion of the project site, would remain pervious and therefore contribute to groundwater recharge. Additional drainage features, such as the proposed catch basins and storage gallery retention system, would further contribute to groundwater recharge. As such, the project would not substantially decrease groundwater supplies or interfere with groundwater recharge. Therefore, impacts associated with groundwater supplies and recharge would be **less than significant**.

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:***

    a. ***Result in substantial erosion or siltation on or off site?***

Project construction would involve earth-disturbing activities, including grading, that could expose on-site soils to erosion and surface water runoff. Construction of the project would result in more than 1 acre of land disturbance; therefore, the project would be required to prepare and implement a SWPPP in accordance with the Statewide Construction General Permit. This requires implementation of BMPs for different phases of the construction to ensure that water quality standards are met and that stormwater runoff from the construction work areas does not cause degradation of water quality in receiving water bodies. Specific BMPs that address erosion impacts include erosion control blankets, watering of site, and sediment filters. BMP options that could be used during construction would include perimeter sediment control, sediment basins, sediment traps, hydroseed, geotextiles and mats, soil binders, silt fence, check dams, fiber rolls, gravel bag berms, street sweeping and vacuuming, storm drain inlet protection, stabilized construction entrance/exit, stabilized construction roadway, entrance/outlet tire wash, and dust control measures.

During operation, the project would introduce a new development on the site, resulting in more impervious area to the site. As such, the project site would be graded and paved, greatly reducing the possibility for soil erosion and siltation compared to current conditions. However, introducing more impervious area would result in more surface runoff, which could lead to more soil erosion and siltation. As shown in Figure 3-7 and discussed in Threshold 1, above, the project would include a new on-site storm drainage system, which would include removal and reconstruction of an existing 26-inch RCP along North Sunnyside Avenue; a new 36-inch RCP at North Sunnyside Avenue, between Streets A and B; two 18-inch RCP lateral connections to the southern end of the site; and four catch basins, within the western portion of the site. The eastern portion of the site would include 18-inch and 24-

inch RCPs; two catch basins each within Streets A, B, and C; two catch basins, to be located just to the northeast of the project site, within the existing Carter Avenue; and a 63,500-cubic foot retention storage gallery, to be located within the public park. The proposed underground storage gallery retention system would collect low flow project runoff from both the eastern storm drain system to ensure LID compliance. The underground storage gallery retention system would be implemented to address downstream water quality concerns through infiltration by slowly reducing runoff into the storm drain system, which will assist in reducing runoff velocities that contribute to downstream erosion and sediment transport; thus, reducing soil erosion and siltation. Lastly, per the Geotechnical Investigation prepared for the project (Appendix E), project design features (PDFs), such as **PDF-GEO-7**, which requires that fill slopes are planted to avoid erosion, and **PDF-GEO-9**, which requires erosion measures during grading and prior to the completion and construction of permanent drainage controls, would be incorporated into the design of the project (see Section 3.3.10, Grading Plan, in Chapter 3, Project Description, for details). More specifically, per **PDF-GEO-7**, slopes shall be designed at a gradient of 2:1 or less; slope face compaction shall obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses and stabilization fills; and All fill slopes shall be planted or protected from erosion by methods specified in the geotechnical report, or required by the controlling governmental agency. Per **PDF-GEO-9**, construction of the proposed project shall comply with Erosion control measures, when necessary, during grading and prior to the completion and construction of permanent drainage controls; and care shall be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property. Therefore, with implementation of these PDFs, impacts associated with substantial erosion or siltation on or off site would be **less than significant**.

b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

The project site is located in Zone X, an area of minimal flood hazard per the FEMA FIRM panel 06037C1400F effective September 26, 2008 (FEMA 2020). This area is higher in elevation than the 0.2% annual chance flood (i.e., 500-year flood). In addition, as previously discussed in Threshold 3(a), above, the project would introduce a new residential use with associated infrastructure and open space, resulting in more impervious area to the site. As such, the impervious area would result in more surface runoff that would potentially result in flooding on or off site. As discussed in Threshold 1, the project would include a new on-site storm drainage system inclusive of proposed catch basins that would capture offsite flows before entering the project site. Flows would be conveyed to the receiving waters of Arcadia Wash, located southeast of the project site. In addition, an underground storage gallery retention system would assist in reducing runoff velocities within the eastern portion of the site. In addition, final drainage plans would be required to be approved by the City as part of the final construction or grading plans, to ensure that stormwater retention is designed to meet, or exceed, the City's LID requirements for 85th percentile in a 24-hour storm event, and that onsite detention is designed to retain the capital 100-year storm event. As such, the potential for the project to create an increase in the rate or amount of surface runoff in a manner that would result in flooding on or off site would be **less than significant.**

c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The project site contains an existing storm drain and catch basins within North Sunnyside Avenue (see Figure 3-7). As previously discussed under Threshold 3(a), above, the project involves development of two storm drain networks, to properly convey flows from the western and eastern portions of the site. Within the western portion of the site, the project would involve removal of portions of the existing 36-inch pipe, which would be reconstructed under the realignment of North Sunnyside Avenue and would connect with a proposed 36-inch RCP, to be located at North

Sunnyside Avenue, between Street A and Street B. Additionally, the proposed western storm drain network would include development of two proposed 18-inch RCP lateral connections at the southern end of the project site; two onsite catch basins within the southern end of North Sunnyside Avenue, to capture runoff generated from the western portion of the project site; and two additional catch basins, to be located just to the northeast of the project site to capture offsite flows before runoff enters the project site via the North Sunnyside Avenue realignment. The western storm drain network would tie in with an existing 36-inch storm drain in North Sunnyside Avenue, at the southwest portion of the site and ultimately conveys runoff to Arcadia Wash, located approximately 100 feet southeast of the intersection of South Lima Street and West Orange Grove Avenue.

The second storm drain network would be located on the eastern portion of the site and would be comprised of 18-inch and 24-inch RCPs. Streets A, B, and C would include two catch basins each, and would each capture and convey surface runoff to the east. The second storm drain network would extent along the majority of the proposed improvement of Carter Avenue and would also convey surface runoff captured by two catch basins, to be located directly to the northeast of the project site. A 24-inch RCP would be located in the southeastern portion of the project site and would run in the east to west direction into the proposed retention gallery, within the proposed park. The proposed retention storage gallery would be approximately 24 inches below ground and will promote water quality treatment through infiltration. Stormwater that is not retained in the underground storage gallery retention system or infiltrated into the ground would be routed to the southeast corner of the proposed park and exit to Crestvale Drive via a 24-inch surface culvert to the MS4 downstream to Arcadia Wash. Flows would then be conveyed via the MS4 to the receiving waters of Arcadia Wash, an open concrete lined channel located approximately 1 mile southeast of the project site. The detention basin would promote water quality treatment and HMP of stormwater runoff. Lastly, all stormwater draining south from the Mater Dolorosa Retreat Center would be conveyed into the proposed catch basins on the north side of North Sunnyside Avenue and the north side of Carter Avenue, before flowing underground within existing storm drains. Thus, within implementation of proposed stormwater improvements, there would be sufficient drainage capacity to accommodate drainage from the proposed project. Therefore, the project would not create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage or provide substantial additional sources of polluted runoff. Impacts would be **less than significant**.

d. Impede or redirect flood flows?

As discussed in Threshold 3(b), the project site is located in Zone X, an area of minimal flood hazard per the FEMA FIRM panel 06037C1400F effective September 26, 2008 (FEMA 2020). This area is higher in elevation than the 0.2% annual chance flood (i.e., 500-year flood). The project would introduce impervious area to the project site, which would increase surface runoff that could result in increased on- or off-site flooding. As discussed in Threshold 1, the project would include a new on-site stormwater drainage system inclusive of catch basins and an underground storage gallery retention system. The proposed catch basins that would capture off-site flows before entering the project site and convey flows to the receiving waters of Arcadia Wash, located southeast of the project site (see Figure 3-7). Additionally, the underground storage gallery retention system would assist in reducing runoff velocities that may result from the project. Therefore, impacts associated with impeding or redirecting flood flows would be **less than significant**.

4. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

A seiche is generally associated with oscillation of enclosed bodies of water typically caused by ground shaking associated with a seismic event; however, the project site is not located near an enclosed body of water. The closest body of water to the project site is the Pacific Ocean, located approximately 26 miles west of the project site. Thus,

the probability of inundation by seiche or tsunamis is considered negligible. As discussed previously, the project site is located in Zone X, an area of minimal flood hazard per the FEMA FIRM panel 06037C1400F effective September 26, 2008 (FEMA 2020). This area is higher in elevation than the 0.2% annual chance flood (i.e., 500-year flood). As previously discussed, although internal drainage patterns would be somewhat altered as a result of project development, the project would maintain adequate stormwater conveyance as to not result in an increase of surface runoff that would result in flooding on or off site associated with the 50-year, 24-hour storm event (Capital Flood Event). Furthermore, as discussed previously, the project would include a new on-site stormwater drainage system inclusive of catch basins and an underground storage gallery retention system, to convey flows before being discharged to the MS4 (see Figure 3-7). The underground storage gallery retention system would assist in reducing runoff velocities that would potentially cause inundation to the project site. Runoff that is not retained onsite is conveyed to the southeast corner of the park and exit to Crestvale Drive via a surface culvert and to the MS4 downstream to Arcadia Wash. Therefore, impacts associated with flood hazard, tsunami, or seiche zones, and risk release of pollutants due to project inundation would be **less than significant**.

5. *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

As discussed in Threshold 2, the Raymond Groundwater Basin underlies the entire project site (UCLA 2020). Water to be consumed by the project would be provided by the SMWD, which previously sourced its water supply primarily from the Santa Anita Sub-area, which is a sub-unit of the Raymond Groundwater Basin. However, as discussed in Section 4.10.1, above, beginning October 2013, well production was reduced by 95 percent due to low groundwater levels of the Raymond Groundwater Basin. Management of the water resources of the Raymond Groundwater Basin is based on the RBJ. The RBJ is administered by the RBMB and is comprised of various participating parties, including the City, to manage and preserve groundwater levels of the Raymond Basin. However, the Raymond Groundwater Basin is classified by DWR as a very low priority basin (DWR 2019). Therefore, no sustainable management plan has been prepared or is required for the Raymond Groundwater Basin.

As discussed above, due to multiple dry year conditions, the RBMB implemented a "500-foot" level limitation for all Decreed Rights to the Santa Anita Sub-area in 2013. As a result, the City's adjusted right to the Santa Anita Sub-area was limited to 940 AFY. Until the groundwater level exceeds 500 feet above mean sea level, the limitation on production will remain (City of Sierra Madre 2021). As discussed under Threshold 2, above, construction of the project would not require the use of groundwater, while operations of the proposed project would result in an increased water demand of approximately 11.91 AFY. As described in detail in Section 4.19.5 of this EIR, the total projected water supplies available to SMWD and SGVMWD during normal, single-dry, and multiple-dry years would be sufficient to meet the projected water demands for the proposed project and would therefore not result in a substantial use of groundwater supplies that would conflict with or obstruct the implementation of a sustainable groundwater management plan.

Furthermore, as stated in Section 4.19, Utilities and Services Systems, of this EIR, to achieve a net-zero impact on local water supplies, the project Applicant would provide funds to the City to purchase supplemental water from the SGVMWD in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period (see **PDF-UTL-1** in Sections 3.3.13 and 4.10.4). This purchase would be in addition to the City's existing agreement with SGVMWD, which allows the City to purchase up to 2,500 AFY of supplemental water from SGVMWD, providing for the purchase of supplemental imported water. The additional supplemental water procured by the City as a result of the project would be stored in the Main San Gabriel Groundwater Basin and would be available to serve the public, as needed.

In addition, as discussed in Section 4.10.2, Relevant Policies, and Ordinances, and Threshold a, above, the Los Angeles RWQCB jurisdiction oversees water quality in the Los Angeles region. As such, the RWQCB has adopted the Basin Plan (RWQCB 2014). The Basin Plan is a water quality control planning document and designates beneficial uses and water quality objectives for waters including surface waters and groundwater. The project would be required to comply with applicable regulations and permit requirements intended to support the objectives and policies of the Basin Plan regarding water quality and erosion and sediment control. As discussed under Threshold a, above, the proposed project would be required to comply with the MS4 permit that regulates stormwater and non-stormwater discharges and the requirements of the Basin Plan, which includes implementation of BMPs to reduce water quality impacts. The structural BMPs implemented for the proposed project include development of features that would address downstream water quality concerns as well as assist in reducing runoff velocities that contribute to downstream erosion and sediment transport. These include an underground storage gallery retention system, which would promote water quality treatment and HMP of stormwater runoff. Thus, storm drainage improvements would reduce project impacts associated with water quality and soil erosion and would allow for the project to be consistent with objectives and policies identified in the Basin Plan. Therefore, the project would not obstruct implementation of a water quality plan or sustainable groundwater management plan; thus, impacts would be **less than significant**.

4.10.6 Mitigation Measures

No mitigation measures would be required.

4.10.7 Level of Significance After Mitigation

No mitigation measures would be required. Impacts to hydrology and water quality would be **less than significant**.

4.11 Land Use and Planning

This section provides an overview of land uses for The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and surrounding region, the regulatory framework, and an analysis of potential conflicts with existing land use plans that would result from implementation of the proposed project.

4.11.1 Existing Conditions

Project Site

The project site is located within the northwestern corner of the City of Sierra Madre (City) within the current grounds of the Mater Dolorosa Retreat Center. The Mater Dolorosa Retreat Center currently is on the same legal parcel as the project site, which is currently split within three different lots. A lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two southern lots that make up the project site as one lot and adjust the northern boundary of this new lot farther to the north. North Sunnyside Avenue, which crosses through the western portions of the site, and Carter Avenue, which extends through the eastern portion of the site. An additional access road traverses the northern portion of the site from east to west. Public access via both North Sunnyside Avenue and Carter Avenue currently ends at the Mater Dolorosa Retreat Center's gates within the southern portion of the site. Under existing conditions, the project site is vacant and consists of disturbed and maintained areas. Vegetation on-site consists of non-native grasslands and ornamental vegetation.

The project site is currently zoned and has a General Plan land use designation of Institutional (I) (City of Sierra Madre 2015, 2017).

Surrounding Land Uses

The project site is surrounded by Bailey Canyon and Bailey Canyon Wilderness Park to the east, existing single-family residential development to the south and west, and the Mater Dolorosa Retreat Center, which is primarily used to host religious and silent retreats and other activities, to the north. There is an access road through the project site that leads to the Mater Dolorosa Retreat Center; however, the Mater Dolorosa Retreat Center is not a part of the project site. The Mater Dolorosa Retreat Center's ongoing activities are not anticipated to be affected by the proposed project as the site will remain intact. The Mater Dolorosa Retreat Center is zoned and has a General Plan land use designation of Institutional (I) (City of Sierra Madre 2015, 2017). The surrounding area to the north of the Mater Dolorosa Retreat Center and east of the project site is zoned as Hillside Management (H). Land to the south, southwest, and east is zoned as One Family Residential, which has a minimum lot size of 7,500 square feet (R-1) (City of Sierra Madre 2017). The area directly west and northwest of the project site is located in the City of Pasadena and is zoned as Single Family Residential (RS) (City of Pasadena 2018). The City's General Plan designate land uses to the north as Natural Open Space (NOS); to the east as NOS, Municipal (M), and Constructed Open Space (COS); and to the south and southwest as Residential Low Density (RL) (City of Sierra Madre 2015). The land to west and northwest is located within the City of Pasadena and is designated by the City of Pasadena General Plan as Low Density Residential (0–6 dwelling units per acre) (City of Pasadena 2016).

4.11.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to land use and planning relevant to the proposed project.

State

Regional Housing Needs Assessment

The Regional Housing Needs Assessment (RHNA) is mandated by the State Housing Law as part of a periodic process of updating local housing elements in city and county general plans. RHNA quantifies the need for housing within each jurisdiction during specified planning periods. RHNA is produced by the Southern California Association of Governments and contains a forecast of housing needs within each jurisdiction in the region for 8-year periods (see additional discussion below).

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the nation's largest metropolitan planning organization, representing six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura), 191 cities, and more than 18 million residents. SCAG undertakes a variety of planning and policy initiatives to encourage a more sustainable Southern California. The agency develops long-range regional transportation plans, including sustainable communities' strategy and growth-forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the south coast air quality management plans (SCAG 2016). As discussed above, the RHNA is mandated by the State Housing Law as part of a periodic process of updating local housing elements in city and county general plans. RHNA is produced by SCAG and contains a forecast of housing needs within each jurisdiction in the SCAG region for 8-year periods. The 5th Cycle RHNA Allocation Plan covers the planning period between October 2013 through October 2021. The 6th Cycle RHNA has been approved on March 22, 2021. The 6th Cycle identified a need for 1,341,827 additional housing units within the SCAG region. Of the SCAG regional allocation, the total assigned to the City was 204 units, and the total assigned to the County is 90,052 units (SCAG 2021). Based on a methodology that weighs a number of factors (e.g., projected population growth, employment, commute patterns, and available sites), SCAG determines quantifiable needs for dwelling units in the region according to various income categories. Once the RHNA allocation is established, local jurisdictions decide how to address their housing needs through the process of updating general plan housing elements. The City's latest housing element was produced in 2014 for the years 2014 through 2021. The proposed project would fall into the 6th Cycle of the RHNA and would therefore contribute to the City's efforts toward meeting its allocation.

Local

City Council 6-Month Strategic Plan

Every 6 months the City Council convenes a Strategic Planning Sessions to set the goals and objectives for the next six months. The City Council receives monthly updates at a regular Council meeting on the progression of the objectives.

Parks and Facilities Master Plan

The Parks and Facilities Master Plan helps meet the needs of the City's current and future residents and to build on the community's unique recreational facilities, parks, and trail assets. The Parks and Facilities Plan is intended to serve as a guide for future recreational facility and park improvements and acquisition. Another important purpose of the Parks and Facilities Master Plan is to represent the community's desires for a balance between parks, open space, and trails. Above all, the Parks and Facilities Master Plan seeks to contribute to a higher quality of life in Sierra Madre (City of Sierra Madre 2012).

Community Forest Management Plan

The Community Forest Management Plan ensures the continuation and enhancement of the tree canopy for the beauty, wellbeing, livability, and long-term environmental health of the community of Sierra Madre. The City of Sierra Madre's mission to grow and perpetuate the community forest is embodied in the Community Forest Master Plan. This mission is expressed through these overarching goals (City of Sierra Madre 2014a):

- Conserve and expand tree canopy cover equal to no net loss, with a gradual increase over time.
- Foster increased public awareness and education regarding the environmental value of trees as green infrastructure.
- Promote increased shade-tree canopy for energy conservation, storm water capture, and improved air quality.
- Encourage species selection appropriate for local environmental conditions and sustainability.
- Preserve and enhance community aesthetics and property values through increased canopy cover and diversity.
- Apply best management practices for planting, maintaining, and responding to changed environmental conditions in the community forest.

City of Sierra Madre General Plan

The City of Sierra Madre General Plan (General Plan) is a long-range policy document that lays out the framework for all future growth and development within the City. The General Plan is the blueprint that sets the basis for future policy decisions, in that it organizes the desires of the Sierra Madre community with respect to the physical, cultural, economic, and environmental character of the City. Most importantly, the Sierra Madre General Plan is a community-based document that reflects the community values and character as expressed in its goals and policies, while also serving as a technical document which provides information about the City. The General Plan shall be used as a guide by the City's decision makers to achieve the community's vision and preserve the history, character, and shared values of the community for future generations (City of Sierra Madre 2015).

Land Use

The Land Use Element of the General Plan contains five components: land use designations, historic preservation, housing, economic development, and circulation and traffic. Goals, objectives, and policies are presented in the Land Use Element to support applicable growth, preservation, and diversity initiatives associated with the aforementioned categories. Section 4.11.5, Impacts Analysis, examines the project's consistency with the applicable goals, objectives, and policies (City of Sierra Madre 2015).

Hazard Prevention Element

The Hazard Prevention Element includes four components: fire safety, flood/landslide, seismic safety, and noise. The hazard components are further analyzed for safety concerns within the City and include relevant maps (City of Sierra Madre 2015).

Housing Element

The most recent Housing Element (2014–2021) was adopted by City Council on January 28, 2014. Because the Housing Element was recently updated and is subject to specific laws and timeframes dictated by the State of California, it is provided separate of the General Plan. The Housing Element focuses on strategies and programs including preserving housing and neighborhood assets, ensuring housing diversity, removing governmental constraints on housing, promoting environmental sustainability. In addition, the Element provides an analysis of the City's demographics, household and housing characteristics and related housing needs; a review of potential market, governmental, and infrastructure constraints to meeting the City's housing needs; an evaluation of residential sites and financial resources for housing; and the Housing Plan for addressing the City's identified housing needs, constraints, and resources (City of Sierra Madre 2014b).

Resource Management Element

The Resource Management Element of the General Plan contains seven components: hillside preservation, co-existence with wildlife, Dark Sky, tree preservation, water resources, waste management/recycling, and air quality. With the exception of co-existence with wildlife and Dark Sky, all are required as part of the State-mandated conservation element (City of Sierra Madre 2015).

City of Sierra Madre Municipal Code

Chapter 17.52 H Hillside Management Zone

The purpose of Chapter 17.52 is to protect the natural environment of hillside areas from change by preserving and protecting views to and from hillside areas; facilitate hillside preservation through the development standards and guidelines set forth in this chapter; ensure that development in the hillside areas is located so as to result in the least environmental impact; and prohibit development that will cause hazards to the public peace, health, welfare, and safety.

Dedication of Land for Park and Recreation Land

At the time of approval of the tentative map or parcel map, the city council shall determine, pursuant to Section 16.44.040, the land required for dedication or in-lieu fee payment. As a condition of approval of a final subdivision map or parcel map, the subdivider shall dedicate land, pay a fee in-lieu thereof, or both, at the option of the city, for neighborhood and community park or recreational purposes at the time and according to the standards and formula contained in this chapter. In the event park and recreational services are provided by a public agency other than the city, the amount and location of land to be dedicated or fees to be paid shall be jointly determined by the city and such public agency.

Tentative Map

Per Section 16.40.050, an application for a tentative and final tract map will be submitted concurrently for approval in accordance with established requirements. A site plan, floor plan, and elevation plan also will be submitted for review and approval.

4.11.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to land use and planning are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to land use and planning would occur if the project would:

1. Physically divide an established community.
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.

4.11.4 Project Design Features

There are no project design features that apply to land use and planning.

4.11.5 Impacts Analysis

1. Would the project physically divide an established community?

The project site is surrounded by Bailey Canyon and Bailey Canyon Wilderness Park to the east, existing single-family residential development to the south and west, and the Mater Dolorosa Retreat Center to the north. As discussed in Section 4.11.1, Existing Conditions, the Mater Dolorosa Retreat Center is on the same parcel as the project site, which is currently split within three different lots. However, the Mater Dolorosa Retreat Center is not a part of the project site and a lot line adjustment would be processed to adjust the boundaries of the three existing lots that make up the Mater Dolorosa Retreat Center and the project site. The lot line adjustment would consolidate the two southern lots that make up the project site as one lot and adjust the northern boundary of this new lot farther to the north. In addition, there are three existing roads within the project site: North Sunnyside running north to south on the west side, Carter Avenue running north to west on the east side, and an access road that crosses horizontally connecting North Sunnyside Avenue and Carter Avenue. Furthermore, the project site does not support any existing structures. Public access within both roads currently ends at the Mater Dolorosa Retreat Center's gates within the southern portion of the site.

Adoption of The Meadows at Bailey Canyon Specific Plan (Specific Plan) would establish the zoning and development standards to guide future development on-site, which would consist of 42 detached single-family residential units and 3.39 acres of open space (including an approximately 3.04-acre dedicated neighborhood park), within the 17.30-acre project site. Under future development of the site, access to the project site provided via North Sunnyside Avenue would become public. Carter Avenue would be improved and would become publicly accessible from within the project site and would serve as secondary access to the project site from the south. Furthermore, the project would include reconfiguration of North Sunnyside Avenue, which would be moved farther to the west. Lastly, three additional streets that run east to west would be provided within the project site. This includes Streets A, B, and C (see Figure 3-2, Conceptual Site Plan, in Chapter 3, Project Description, of this Environmental Impact Report [EIR]). Therefore, the project would improve circulation on the project site. Furthermore, part of the project would include the development of an approximately 3.04-acre dedicated neighborhood public park at the southernmost portion of the project site (see Figure 3-3, Proposed Park Conceptual Plan, in Chapter 3 of this EIR). The park's location along the southern boundary of the site will provide

enhanced connectivity to the Bailey Canyon Wilderness Park to the east. Therefore, the proposed project would not physically divide an established community and impacts would be **less than significant**.

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?

The project site is currently zoned and designated in the General Plan as Institutional (I) (City of Sierra Madre 2015, 2017). Implementation of the project would require amendments to the General Plan, Zoning Code, Zoning and Land Use maps, and approval of the Specific Plan. The General Plan and Zoning Code amendments would primarily change this land use designation from Institutional to Specific Plan. The approval of the Specific Plan would provide guidelines and standards for the implementation of future development of the project.

Sierra Madre General Plan

Land Use Element

The Land Use Element contains five components: land use designations, historic preservation, housing, economic development, and circulation and traffic. Goals, objectives, and policies are presented in the Land Use Element to support applicable growth, preservation, and diversity initiatives associated with the aforementioned categories. General Plan Land Use Element objectives relevant to the proposed project are outlined in Table 4.11-1 (City of Sierra Madre 2015).

As described above, the proposed project would amend the General Plan and Zoning Code to change the land use designation of the project site from Institutional to Specific Plan. As shown in Table 4.11-1, the proposed project would be consistent with most of the applicable goals, objectives, and policies of the City's General Plan Land Use Element. However, because the project would not implement bicycle facilities, the project would be inconsistent with Policy L52.8 of the Land Use Element. However, not constructing bicycle facilities would not result in environmental impacts. Therefore, inconsistencies with this General Plan policy would not result in 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.

Housing Element

The most recent Housing Element (2014–2021) was adopted by City Council on January 28, 2014. Because the Housing Element was recently updated and is subject to specific laws and timeframes dictated by the State of California, it is provided separate of the General Plan. The Housing Element focusses on strategies and programs including preserving housing and neighborhood assets, ensuring housing diversity, removing governmental constraints on housing, promoting environmental sustainability. In addition, the Housing Element provides an analysis of the City's demographics, household and housing characteristics and related housing needs; a review of potential market, governmental, and infrastructure constraints to meeting the City's housing needs; an evaluation of residential sites and financial resources for housing; and the Housing Plan for addressing the City's identified housing needs, constraints, and resources. Housing Element (2014–2021) goals relevant to the proposed project, as well as whether or not the project complies with these goals, are outlined in Table 4.11-1 (City of Sierra Madre 2014b). As shown in Table 4.11-1, the proposed project would not conflict with the Housing Element of the General Plan.

Resource Management Element

The Resource Management Element of the General Plan contains seven components: hillside preservation, co-existence with wildlife, Dark Sky, tree preservation, water resources, waste management/recycling, and air quality. With the exception of co-existence with wildlife and dark sky, all are required as part of the state-mandated conservation element. Objectives relevant to the proposed project, as well as whether or not the project complies with these objectives, are outlined in Table 4.11-1 (City of Sierra Madre 2014b, 2015). As discussed in Table 4.11-1, the project would be consistent with all goals, policies, and objectives of the Resource Management Element of the General Plan aside from Goal 4, use of local sources of groundwater rather than imported water and Goal 1, continued preservation and protection of existing trees. Inconsistencies with Goal 4 would take place because, in order to achieve a net-zero impact on local water supplies, the project Applicant will provide funds to the City to purchase supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD) in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period. . This purchase would be in addition to the City's existing agreement with SGVMWD (see **PDF-UTL-1** in Sections 3.3.13 and 4.19.4) As discussed in Section 4.19, Utilities and Service Systems, water supply to the City would primarily be provided through imported water until the Raymond Groundwater Basin returns to a sufficient level of groundwater. Therefore, because the project could result in use of imported water, the project would be inconsistent with this goal. Nonetheless, as discussed in Section 4.19, the proposed project would not result in any environmental impacts associated with water supplies. Therefore, the use of imported water associated with the project would not result in 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. In addition, because the project would remove existing trees, the project would be inconsistent with Goal 1. However, various tress would be removed under the proposed project, the project would introduce new trees throughout the site, within the proposed public park, along proposed streets, and within the open space located in the northern portion of the project (see Figure 3-5, Conceptual Landscape Plan). Therefore, through replacement of existing trees, per **MM-BIO-3** (see Section 4.4, Biological Resources), the project would not result in 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 resulting from inconsistencies with this goal.

Hazard Prevention Element

The Hazard Prevention Element includes four components: fire safety, flood/landslide, seismic safety, and noise. The hazard components are further analyzed for safety concerns within the City and include relevant maps. Objectives relevant to the proposed project, as well as whether or not the project complies with these objectives, are outlined in Table 4.11-1 (City of Sierra Madre 2015). As shown in Table 4.11-1, the proposed project would not conflict with the Hazard Prevention Element of the General Plan.

General Plan Conclusion

As discussed above and shown in Table 4.11-1, the proposed project would not result in conflicts with any applicable policies element of the General Plan, aside from Goal 4 and Policies L51.2 and L52.8. However, as discussed above, these inconsistencies would not result in an environmental significant impact. As discussed above, not constructing bicycle facilities would not result in environmental impacts, and the environmental impacts associated with the reconfiguration of North Sunnyside Avenue and improvements of Carter Avenue have been evaluated throughout this EIR. In addition, **MM-BIO-3** would be required to avoid inconsistencies with various tree preservation policies of the General Plan. As identified in the General Plan, the project site is designated as Institutional. As such, the proposed project would conflict with the current General Plan land use designations, as described above. However, the proposed project would involve an amendment to the General

Plan and Zoning Code, changing the land use designation and zoning of the project site from Institutional to Specific Plan. This amendment to the General Plan and Zoning Code would allow the proposed land uses to be developed on the project site. Therefore, the proposed project would be consistent with the General Plan and no significant environmental impact would occur.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Chapter One: Land Use	
Goal 2: Preserve and enhance the diversity in the character of residential neighborhoods ensuring that new development is compatible in its design and scale with older established development in the surrounding neighborhood without attempting to replicate or mass produce a style of development.	Consistent. The proposed project would assist in the implementation of this Goal through the provision of design guidelines, which would be compatible with existing surrounding neighborhoods.
Goal 3: Ensure that development is done in harmony with its neighborhood, and preserves and protects privacy and mountain views of neighboring properties.	Consistent. The proposed project includes development regulations and design guidelines for the project site created to be compatible with the surrounding neighborhood. The proposed project is designed in a manner that is sensitive to scenic viewpoints and/or viewsheds through building design, site layout and building heights.
Goal 4: Ensure that development is done to maximize water conservation practices to reduce and minimize the impact on the City's local water supply and the ability to serve its water customers.	Consistent. The project would comply with City requirements per this Goal. Additionally, the project would include the incorporation of green infrastructure into the design (e.g., bioswales, permeable paving, and native/drought-resistant landscaping) to promote water conservation.
Goal 5: Institute conservation measures so that the demand for water matches the City's local supply.	Consistent. This policy is a responsibility of and directed to the City of Sierra Madre. However, the proposed project would incorporate water conservation strategies into the project design, including the use of native/drought-resistant landscaping and use of recycled water. In addition, the project would achieve a net-zero impact on local water supplies to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19, Utilities and Service Systems).
Goal 8: Preserve existing and provide additional constructed and natural open space.	Consistent. The project would comply with the City's goal of providing additional constructed open space. The proposed project establishes open spaces zones on the project site, including the incorporation of a neighborhood park at the southern area of the project site and dedication of approximately 35 acres of protected open space to the City, north of the Mater Dolorosa Retreat Center.
Objective L1: Continuing the existing pattern of residential housing development.	Consistent. The proposed project would assist with the implementation of this objective as it creates similar low-density residential and open space land uses as compared to those surrounding the project site.
Policy L1. 1: Maintain areas of the City for single-family residences on varying lot sizes through the review and update of appropriate development	Consistent. The proposed project would assist with the implementation of this policy as it creates similar low-density residential land uses as compared to those

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
standards.	surrounding the project site and would not remove existing single-family residences.
Policy L1.6: Require that new residential development, substantial remodeling and additions comply with all adopted water conservation measures that reduce and minimize the impact on the City's water supply and its ability to serve its water customers.	Consistent: The proposed project would incorporate water conservation strategies into the project design, including the use of native/drought-resistant landscaping and use of recycled water. The proposed project would also achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19.4). Additional details are provided in Section 4.19, Utilities and Service Systems.
Objective L4: Mitigating the impacts of new development on the City's open space, trees, infrastructure, water, transit services, the character of existing development, and other public needs.	Consistent: The proposed project would incorporate mitigation measures to reduce all potentially significant impacts to less than significant, including for protected tree replacement, as detailed in Table ES-1 of Chapter ES, Executive Summary. The proposed project would also dedicate approximately 35 acres of protected open space to the City and would incorporate water conservation measures such as the use of native/drought-resistant landscaping and use of recycled water. Ultimately, as determined in this EIR, the proposed project would not result in any significant and unavoidable impacts.
Policy L4. 2: Except for those single family residences that would not otherwise require a conditional use permit (CUP), development projects that cumulatively comprise over one acre of land on one or more parcels require a CUP unless a specific plan or master plan is approved for the proposed project.	Consistent: The proposed project would result in General Plan and zoning amendments to change the project site land use designation and zoning to Specific Plan (SP), consistent with this policy.
Policy L4. 3: Ensure that new development and the expansion of existing uses incorporate water conservation measures that reduce and minimize the impact on the City's water supply and its ability to serve its customers.	Consistent: The proposed project would incorporate water conservation strategies into the project design, including the use of native/drought-resistant landscaping and use of recycled water. The proposed project would also achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19.4). Additional details are provided in Section 4.19, Utilities and Service Systems.
Objective L5: Preserving the existing grid street pattern which promotes community life.	Consistent: The proposed project would result in improvements to North Sunnyside Avenue and would extend public accessibility along this roadway. Circulation throughout the project site would be provided by Streets A, B, and C, along with Carter Avenue. Roadway design on the project site would be consistent with the City's existing grid street pattern.
Policy L5. 1: Prohibit the use of cul-de-sacs and require through streets in new subdivisions except when no other access is physically feasible due to	Consistent: The proposed project would not include the use of cul-de-sacs. Streets A, B, and C are proposed as through streets, which would connect to North Sunnyside Avenue

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
property ownership, parcel location or other physical factors.	and Carter Avenue.
Objective L6: Development that is done in harmony with its neighborhood and preserves and protects the privacy, mountain and basin views of neighboring properties.	Consistent: The proposed project is designed in a manner that is sensitive to scenic viewpoints and/or viewsheds through building design, site layout and building heights. The Specific Plan's Design Guidelines for proposed balconies specify the protection of privacy of adjacent neighbors and to avoid balconies with overlooking views into adjacent properties. Additionally, the proposed project would result in less than significant impacts to scenic vistas as detailed in Section 4.1, Aesthetics.
Policy L6.2: Ensure that any new or expanded structures in residential neighborhoods do not unreasonably obstruct significant mountain or basin views.	Consistent: The proposed project is designed in a manner that is sensitive to scenic viewpoints and/or viewsheds through building design, site layout, and building heights. For example, landscaping is proposed to frame important viewsheds and reduce the visual impact of the building to adjacent neighbors. Additionally, the proposed project would result in less-than-significant impacts to scenic vistas as detailed in Section 4.1, Aesthetics.
Objective L7: Development that is compatible in its design and scale with the neighborhood.	Consistent. The proposed project would be compatible with existing surrounding neighborhoods by creating new low-density residential land uses, similar to the adjacent existing conditions.
Policy L7. 2: Maintain a maximum floor area for ministerial approvals and require that properties which are proposed to exceed that floor area be reviewed as a discretionary project.	Consistent: The proposed project would be reviewed as a discretionary project and development would be regulated by the development regulations and design guidelines of the Specific Plan.
Policy L7.3: Limit the height of new buildings to reflect the prevailing height patterns on the street and within the Sierra Madre community.	Consistent: The proposed project includes development regulations and design guidelines for the project site. However, any subsequent discretionary approval or amendment to the Specific Plan must be consistent with the General Plan as amended and/or updated. Minor modifications to the Specific Plan may be permitted, subject to the granting of a minor conditional use permit or minor variance pursuant to Chapter 17.60 of the Sierra Madre Municipal Code (SMMC).
Policy L7.4: Encourage new residential development to be compatible with and complement existing structures including the following: a. Maintenance of front, side, and rear yard setbacks. b. Use of landscaping to complement the design of the structure and reflect the Sierra Madre vegetation patterns, with an emphasis on sustainable, low-water use landscaping and use of permeable surfaces for hardscaping, and the use of irrigation equipment that automatically senses the need for water.	Consistent: The proposed project includes development regulations and design guidelines for the project site created to be compatible with the surrounding neighborhood.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
c. Minimize paving in the front yard as necessary to accommodate driveways and pedestrian walkways. d. Require that covered parking be provided. e. Prohibit required parking from being located in the front yard setback except in the Residential Canyon Zone.	
Policy L8.1: Encourage the use of sustainable materials in the design and construction of structures and landscapes.	Consistent: The Specific Plan states that sustainable building materials and practices are encouraged (e.g., Green Seal certified products, products with low levels of volatile organic compounds [VOCs], Leadership in Energy and Environmental Design [LEED] certification). Furthermore, the project would refer to CALGreen for requirements on installing water-conserving and energy-efficient fixtures and appliances, managing stormwater, recycling, building materials, and other sustainable practices.
Policy L8.3: Consider a water impact fee to apply to new residential dwelling units and additions to existing development that increase water consumption, to fund water fixture retrofits of existing homes and other water conservation measures.	Consistent: The proposed project would incorporate water conservation measures guided by the development regulations and design guidelines of the Specific Plan. Water conservation measures would include the use of native/drought-resistant landscaping and use of recycled water. The proposed project would also achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public Furthermore, the project would refer to CALGreen for requirements on installing water-conserving and energy-efficient fixtures and appliances, managing stormwater, recycling, building materials, and other sustainable practices.
Objective L17: Protecting views to and from hillside areas in order to maintain the image and identity of the City as a village of the foothills.	Consistent: The proposed project is designed in a manner that is sensitive to scenic viewpoints and/or viewsheds through building design, site layout, and building heights. For example, landscaping is proposed to frame important viewsheds and reduce the visual impact of the building to adjacent neighbors. Additionally, the proposed project would result in less than significant impacts to scenic vistas as detailed in Section 4.1, Aesthetics.
Policy L17.1: Require the use of natural materials where allowed and earth tone colors for all structures to blend in with the natural landscape and natural chaparral vegetative growth.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan. The design guidelines of the Specific Plan outline site planning and design, architectural design, and landscape design standards that would be implemented as a design of the project to ensure that development is consistent with surrounding development and natural landscape.
Policy L17.2: Require that all development be designed to reflect the contours of the existing land form using techniques such as split pads, detached	Consistent: A grading plan has been developed for the proposed project and included in Figure 3-10, Grading Plan, in Chapter 3. Topography at the project site would be

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
secondary structures (such as garages), and avoiding the use of excessive cantilevers.	altered to form four tiers (three tiers for the proposed residential development, and one tiered for the proposed park), with a slope between each tier. The creation of tiered building pads would allow the project to be designed to reflect the contours of the existing landform.
Policy L17.3: Require that all development preserves, to the maximum extent possible, significant features of the natural topography, including swales, canyons, knolls, ridge lines, and rock outcrops.	Consistent: Topography at the project site would be altered to form four tiers (three tiers for the proposed residential development, and one tiered for the proposed park), with a slope between each tier. The creation of tiered building pads would allow the project to maintain natural topography to the maximum extent possible. As detailed in Section 4.1, Aesthetics, the project site does not contain significant features and would result in a less than significant impacts to scenic vistas.
Policy L17.5: Require that exterior lighting be directed away from adjacent properties and the night sky.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan. These design guidelines include strategies to eliminate skyward glare and preserve "dark skies." Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies. Additionally, as determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in less than significant light and glare impacts.
Objective L20: Maintaining the massing and scale of the existing block and existing structures on sites.	Consistent: The site is currently undeveloped, aside from two access roads. The project would develop 42 detached single-family homes, consistent with the existing single-family residential developments to the south and west of the project site.
Policy L20.1: Require that new residential development be compatible with and complement existing structures on the block: a. Maintain existing front yard setbacks on the block; b. Use compatible building materials, colors, and forms; c. Minimize front yard paving and prohibit front yard parking.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan. The design guidelines of the Specific Plan outline site planning and design, architectural design, and landscape design standards that would be implemented as a design of the project to ensure that development is consistent with surrounding development and natural landscape.
Historic Preservation	
Objective L44: The preservation of natural open space areas as crucial to the distinctive character of Sierra Madre, and as a key feature of sustainability and public safety	Consistent: The proposed project would dedicate approximately 35 acres of protected open space to the City, north of the Mater Dolorosa Retreat Center.
Policy L44.1: Support the purchase of hillside property by the Sierra Madre Mountains Conservancy and similar organizations.	Consistent: Although the Specific Plan does not support the purchase, the Specific Plan does include the dedication to the City or other perpetual conservation of approximately 35 acres of open space hillside land to the north of the Mater Dolorosa Retreat Center.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Objective 45: Acquiring additional natural and constructed open space areas.	Consistent: The Specific Plan includes the dedication to the City or other perpetual conservation of approximately 35 acres of open space hillside land to the north of the Mater Dolorosa Retreat Center.
Objective L46: Identifying and encouraging the preservation of significant historic resources.	Consistent: A Historical Resources Technical Report was prepared for the proposed project and is included as Appendix D1 of this EIR. As discussed in Section 4.5, Cultural Resources, the Mater Dolorosa Retreat Center is not considered an historical resource for the purposes of CEQA. Additionally, the proposed project would also have no physical impact on the Mater Dolorosa Retreat Center or any historical resources.
Objective L47: Preserving in the long-term significant architectural and historical landmarks and districts.	Consistent: A Historical Resources Technical Report was prepared for the proposed project and is included as Appendix D1 of this EIR. As discussed in Section 4.5, Cultural Resources, the Mater Dolorosa Retreat Center is not considered an historical resource for the purposes of CEQA. Additionally, the proposed project would also have no physical impact on the Mater Dolorosa Retreat Center or any historical resources.
Housing	
Goal 1.0: Maintain and enhance the quality of existing housing and ensure that new residential development is consistent with Sierra Madre's small town character.	Consistent. The proposed project would assist in the implementation of this goal through the incorporation of the Specific Plan's design guidelines which would be compatible with existing surrounding neighborhoods.
Policy 1.1: Maintain sustainable neighborhoods with quality housing, infrastructure and open space that fosters neighborhood character and the health of residents.	Consistent: The proposed project would provide new low-density housing, infrastructure improvements, and open space to the project site.
Goal 2.0: Facilitate the provision of a range of housing types to meet community needs.	Consistent: The proposed project would provide new housing on the project site consistent with the surrounding residential community.
Policy 2.1: Encourage diversity in the type, size, price and tenure of residential development in Sierra Madre, while maintaining quality of life goals.	Consistent: The proposed project would assist in the implementation of this policy through the development of low density residential within the project site.
Policy 2.2: Provide adequate housing sites through appropriate zoning and land use designations, consistent with Sierra Madre's regional housing growth needs.	Consistent: The proposed project would assist in the implementation of this policy through the introduction of 42 new housing units to further the City's regional housing growth needs.
Policy 2.5: Encourage the construction of new, well designed second units in residential zones as a means of addressing a portion of Sierra Madre's regional housing needs.	Consistent: The proposed project would assist in the implementation of this policy by allowing secondary uses, such accessory dwelling units, within the proposed land use zone under the Specific Plan, pursuant to the provisions in SMMC, Section 17.22, Second Units.
Goal 5.0: Promote environmental sustainability through support of existing and new development which minimizes reliance on natural resources.	Consistent: The proposed project would incorporate water and energy conservation measures guided by the development regulations and design guidelines of the Specific Plan. Water conservation measures would include the use of native/drought-resistant landscaping and use of

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	recycled water. The proposed project would also achieve a net-zero impact on local water supplies. Furthermore, the project would refer to CALGreen for requirements on installing water-conserving and energy-efficient fixtures and appliances, managing stormwater, recycling, building materials, and other sustainable practices.
Policy 5.2: Promote the use of sustainable construction techniques and environmentally sensitive design for housing.	Consistent: The proposed project would refer to CALGreen (California Green Building Standards Code) for building materials and for requirements on installing water-conserving and energy-efficient fixtures and appliances, managing stormwater, recycling, building materials, and other sustainable practices. Additionally, the proposed project would implement **MM-AQ-1,** which requires construction equipment to meet or exceed the EPA Tier 4 Interim emission standard. Refer to Section 4.3, Air Quality, and Section 4.6, Energy, for additional information.
Policy 5.3: Promote the use of alternative energy sources such as solar energy, cogeneration, and non-fossil fuels.	Consistent: The proposed project would allow for the use of solar panels on proposed structures.
Policy 5.4: Incorporate transit and other transportation alternatives such as walking and bicycling into the design of new development.	Consistent: The proposed project includes a Mobility Plan, which provides for a circulation system using private vehicular and non-vehicular modes of transportation in a system of public roadways and pedestrian pathways within the project site.
Circulation	
Goal 1: A balanced transportation system which accommodates all modes of travel including automobiles, pedestrians, bicycles, and transit users.	Consistent: The proposed project would provide for a circulation system using private vehicular and non-vehicular modes of transportation in a system of public roadways and pedestrian pathways within the project site. These transportation improvements include reconfiguration of North Sunnyside Avenue, located within the western portion of the site; improvements of Carter Avenue; and construction of Streets A, B, and C, which would run east to west within the project site. In addition, a pedestrian path extending from the east side of Carter Avenue would provide pedestrian access to Bailey Canyon Wilderness Park to the east of the site. Sidewalks would also be provided throughout the project site.
Goal 2: Safe and well-maintained streets.	Consistent: The proposed project would extend public access along North Sunnyside Avenue and include new Streets A, B, and C to provide circulation throughout the project site. Carter Avenue would also be improved and would be publicly accessible from within the project site and would become an ingress and egress secondary access road at the southeastern portion of the site. The project would implement street sections that slow traffic and create a safe and pleasant small neighborhood environment.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Goal 3: Preservation of quiet neighborhoods with limited thru traffic.	Consistent: The proposed project would extend public access along North Sunnyside Avenue and include new Streets A, B, and C to provide circulation throughout the project site. Carter Avenue would also be improved and would be publicly accessible from within the project site and would become an egress and ingress secondary access road at the southeastern portion of the site.
Objective L51: Developing a balanced and multi-modal transportation system to serve the needs of all roadway users, including motorists, public transit patrons, pedestrians, and cyclists.	Consistent: The proposed project would provide for a circulation system using private vehicular and non-vehicular modes of transportation in a system of public roadways and pedestrian pathways within the project site. This includes the proposed pedestrian path, which would extend from the east side of Carter Avenue and pedestrian access to Bailey Canyon Wilderness Park to the east of the site, and sidewalks that would promote non-automobile travel throughout the project site. Due to the proximity of existing transit, including transit connection for routes 78 and 268, located at the transit stop on North Sunnyside Avenue and Sierra Madre Boulevard (0.6 miles south of the project site), Grand View Avenue, approximately 0.28 miles south of the site, and at the intersection of Michillinda Avenue and stops for the Gateway Coach, located at the intersection of North Sunnyside Avenue and West Grand View Avenue (approximately 0.28 miles south of the site), and at the intersection of Michillinda Avenue and West Grand View Avenue (approximately 0.34 miles southwest of the site) the project's residents would have access to existing transit facilities.
Policy L51.2: Limit the development of new roadways or the expansion of existing roadways.	Consistent. The proposed project would include reconfiguration of North Sunnyside Avenue, located within the western portion of the site, which would be moved farther to the west, and improvement of Carter Avenue. However, the proposed project would not result in expansion of these roadways beyond the boundaries of the project site. Therefore, the project would be consistent with this policy.
Policy L51.5: Encourage and support the use of non-automotive travel throughout the City.	Consistent: The proposed project would provide for a circulation system using non-vehicular modes of transportation in a system of pedestrian pathways within the project site. In addition, as discussed under Objective L51, above, the proposed project's residents would have access to existing transit facilities, including transit connection for routes 78 and 268 and stops for the Gateway Coach located at the intersection of North Sunnyside Avenue and West Grand View Avenue and at the intersection of Michillinda Avenue and West Grand View Avenue.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy L51.6: Encourage City staff, employees, residents and visitors to walk and bicycle as often as possible.	Consistent. The project will provide public benefits and amenities to the Sierra Madre community, inclusive of a public park that will welcome locals and visitors, provide natural style play features, connect to the Bailey Canyon Wilderness Park and trail, and act as a buffer along existing adjacent homes.
Policy L51.7: Utilize non-automotive transportation solutions as a tool to further goals related to environmental sustainability and economic development.	Consistent: Refer to the consistency analysis for **Objective L51** above.
Policy L51.8: Prioritize improvements for non-vehicular modes like bicycles, pedestrians, and transit to eliminate the need for new or expanded roadways and intersection improvements like traffic signals.	Inconsistent. Due to the small size and scope of this project, bicycle facilities would not be implemented. Additionally, the project would expand existing roadways and develop new roads within the project site. Although no bicycle facilities and improvements are proposed under the project, the project would not impact existing bicycle facilities in the vicinity of the project, including the existing bicycle lanes within Sierra Madre Boulevard. Nonetheless, because bicycle facilities would not be required and the project would result in expanded roadways, the project would be inconsistent with these policies.
Objective L52: Improving streets to maintain levels of service, vehicular, cyclist and pedestrian safety.	Consistent: The proposed project would improve both North Sunnyside Avenue and Carter Avenue and would develop new Streets A, B, and C to provide adequate circulation within the project site. The proposed project would also provide for a circulation system using private vehicular and non-vehicular modes of transportation in a system of public roadways and pedestrian pathways. The Specific Plan includes a Mobility Plan, including a Pedestrian Plan, which will improve both North Sunnyside Avenue and Carter Avenue and develop new Streets A, B, and C to provide adequate circulation within the project site. As determined in Section 4.17, Transportation, of this EIR, the proposed project would not result in transportation related hazards including to cyclists and pedestrians. In addition, as explained in a memorandum titled Traffic Conditions with the Proposed Sierra Madre Residential Project prepared for the project in November 2020, the proposed project would not result in impacts to existing levels of service at any nearby intersection (Fehr & Peers 2020).
Policy L52.8: Require the incorporation of bicycle facilities into the design of land use plans and capital improvements, including bicycle parking within new multi-family and non-residential sites or publicly accessible bicycle parking.	Inconsistent. Due to the small size and scope of this project, bicycle facilities would not be implemented. Although no bicycle facilities and improvements are proposed under the project, the project would not impact existing bicycle facilities in the vicinity of the project, including the existing bicycle lanes within Sierra Madre Boulevard. Nonetheless, because bicycle facilities would not be required, the project would be inconsistent with these policies.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy L52.9: Explore the possibility of sidewalk continuity where feasible.	Consistent: The proposed project would provide sidewalks throughout the project site and includes a pedestrian path, which would extend from the east side of Carter Avenue and pedestrian access to Bailey Canyon Wilderness Park to the east of the site.
Objective L53: Protecting residential neighborhoods from the intrusion of through traffic.	Consistent: The proposed project would extend public access into the project site along North Sunnyside Avenue. Adequate circulation would be provided throughout the project site through development of A, B, and C, and through internal public access along Carter Avenue. Carter Avenue would become an egress and ingress lane and would still allow access to the Mater Dolorosa Retreat Center. Because no existing residential uses would use Carter Avenue or North Sunnyside Avenue for access, the proposed project would not result in intrusive through traffic. These proposed circulation improvements would be used to serve the proposed project residents and would also allow access to the Mater Dolorosa Retreat Center. Due to their location, these proposed improvements would not result in through traffic in adjacent neighborhoods.
Objective L54: Providing off-street parking requirements, on-street parking, and public parking facilities to maximize parking opportunities and address future parking needs.	Consistent: Parking is proposed to be provided within both garages and driveways for single-family residential dwellings as well as a parking lot for the proposed public park. On-street parking would also be provided along North Sunnyside Avenue, Carter Avenue, and Streets A, B, and C.
Chapter Two: Resource Management	
Hillside Preservation	
Goal 3: Public access to the San Gabriel Mountains via parks, trails and roads	Consistent: The project would not hinder public access to the San Gabriel Mountains. In addition, the proposed project would include a neighborhood park that would connect to the Bailey Canyon Wilderness park to the east of the project site, providing additional recreational resources in the area.
Dark Sky	
Goal 1: Protection of the starlit sky to avoid deterioration of the viewing of dark sky as it is a valuable resource.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan. These design guidelines include strategies to eliminate skyward glare and preserve "dark skies." Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies. Additionally, as determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant glare that would adversely affect day or nighttime views in the area.
Goal 3: Consideration of neighboring properties and the community as a whole with regard to exterior lighting through the reduction of negative light impacts in the design of new exterior lighting schemes.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would be fully shielded and pointing downward to reduce spillover

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	and protect dark skies. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Goal 4: Energy conservation.	Consistent: The proposed project contains Design Guidelines including sustainable development attributes for water and energy conservation.
Objective R6: Reducing light pollution, trespass, and unnecessary glare through the use of light shielding methods, and elimination of lighting that is misdirected, excessive, or unnecessary.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Policy R6.1: Require that all new development projects utilize light fixtures that shield the light source so that light is cast downward to avoid light spillage off site or upward into the sky.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Policy R6.2: Discourage continuous all-night exterior lighting and encourage motion-sensored lighting.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would only be used when needed, only light areas that need it, and only be as bright as necessary. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Policy R6.3: Encourage the use of fixtures like the "shoe box" design that are capable of providing accurate light patterns, and can often be used for lighting without spilling onto the neighboring property and upward into the sky.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting or glare that would adversely affect day or nighttime views in the area.
Objective R7: Minimizing lighting use and intensity, utilizing the most efficient lighting technology.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would only be used when needed, only light areas that need it, and only be as bright as necessary. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy R7.2: The City shall, whenever possible, turn off the lights or use motion sensor controlled lighting and encourage the public to do the same.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would only be used when needed, only light areas that need it, and only be as bright as necessary. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Objective R8: The reasonable use of outdoor lighting for nighttime safety, utility, security, and enjoyment while preserving the ambiance of the night.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts while providing adequate lighting for safety and security purposes. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Policy R8.1: Encourage outdoor lighting to be designed and installed in a manner that confines the direct lighting rays to the property upon which the lighting is installed so as to protect adjacent and nearby residential districts and public rights-of-way, and reduce "skyglow."	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting that would adversely affect day or nighttime views in the area.
Policy R8.2: Lighting in and near residential areas shall be minimal and shielded to prevent nuisance glare.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting or glare that would adversely affect day or nighttime views in the area.
Policy R8.3: Lighting attached to single-family home structures should not exceed the height of the eave, and residential lighting pole height restrictions can be considered to control light trespass on adjacent properties and upward into the sky.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. Lighting would be fully shielded and pointing downward to reduce spillover and protect dark skies and all lighting attached to the proposed residences would not exceed the height of the eave. As determined in Section 4.1, Aesthetics, of this EIR, the proposed project would not result in significant lighting or glare that would adversely affect day or nighttime views in the area.
Policy R8.4: Provide adequate illumination of all streets, alleys, and public areas.	Consistent: Development of the proposed project would be regulated by the development regulations and design guidelines in the Specific Plan, which include lighting standards to reduce lighting impacts. The proposed project

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	would provide adequate lighting for illumination of all streets and public areas within the project site, including the proposed neighborhood park.
Tree Preservation	
Goal 1: Continued preservation and protection of existing trees.	Inconsistent: The proposed project would result in the removal of 101 trees on the project site, 10 of which are protected trees by the City Tree Preservation and Protection Ordinance. However, this ordinance provides a permitting process for the removal of these protected trees that incudes mitigation in the form of replacement trees. The proposed project would implement Mitigation Measure **MM-BIO-3**, which would require adequate replacement of protected trees in accordance with the City's ordinance. With implementation of **MM-BIO-3**, the proposed project would result in less than significant impacts on protected trees. In addition, although various tress would be removed under the proposed project, the project would introduce new trees throughout the site, within the proposed public park, along proposed streets, and within the open space located in the northern portion of the project (see Figure 3-5, Conceptual Landscape Plan, in Chapter 3). Nonetheless, because the project would remove existing trees, the project would be inconsistent with this policy.
Goal 2: Increase of the City's community forest.	Consistent: The proposed project would replace protected trees at a 1:1 ratio, in accordance with **MM-BIO-3** and the City's Tree Preservation and Protection Ordinance. This would result in the replacement of at least ten trees on-site. Additionally, the proposed project would include the planting of new trees throughout the project site, including within the neighborhood park and along streets (see Figure 3-5, Conceptual Landscape Plan, in Chapter 3).
Objective R10: Maintaining and enhancing the City's significant tree resources.	Consistent: The proposed project would replace protected trees in accordance with **MM-BIO-3** and the City's Tree Preservation and Protection Ordinance. Additionally, the proposed project would include the planting of new trees throughout the project site, including within the neighborhood park and along streets.
Policy R10.2: Continue to develop tree preservation and protection measures.	Consistent: The proposed project would result in the removal of 101 trees on the project site, 10 of which are protected trees by the City Tree Preservation and Protection Ordinance. However, this ordinance provides a permitting process for the removal of these protected trees that incudes mitigation in the form of replacement trees. The proposed project would implement **MM-BIO-3**, which would require adequate replacement of protected trees in accordance with the City's ordinance. Additionally, the proposed project would include the planting of new trees throughout the project site, including within the neighborhood park and along streets. With implementation of **MM-BIO-3**, the proposed project would result in less than significant impacts on protected trees.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy R10.8: Continue to monitor construction projects with regard to grading and construction effects on trees, tree removal and replacement	Consistent: The proposed project would result in the removal of 101 trees on the project site, 10 of which are protected trees by the City Tree Preservation and Protection Ordinance. However, this ordinance provides a permitting process for the removal of these protected trees that incudes mitigation in the form of replacement trees. The proposed project would implement **MM-BIO-3**, which would require adequate replacement of protected trees in accordance with the City's ordinance. Additionally, the proposed project would include the planting of new trees throughout the project site, including within the neighborhood park and along streets. With implementation of **MM-BIO-3**, the proposed project would result in less-than-significant impacts on protected trees.
Water Resources	
Goal 1: Conservation of the City's water resources.	Consistent: The proposed project would incorporate water conservation measures guided by the development regulations and design guidelines of the Specific Plan. Water conservation measures would include the use of native/drought-resistant landscaping and use of recycled water. The proposed project would also achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19.4). Furthermore, the project would refer to CALGreen for requirements on installing water-conserving and energy-efficient fixtures and appliances, managing stormwater, recycling, building materials, and other sustainable practices.
Goal 3: Growth that is linked to the availability of water.	Consistent: The proposed project would also achieve a net-zero impact on local water supplies (see **PDF-UTL-1** in Section 4.19.4). As discussed in Section 4.19, Utilities and Service Systems, of this EIR, impacts associated with existing water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years would be less than significant.
Goal 4: Use of local sources of groundwater rather than imported water	Inconsistent: The proposed project would achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19.4). However, because the project would use imported water from SGVMWD, the project would be inconsistent with this goal.
Goal 5: Meet or exceed water quality objectives.	Consistent: As discussed in Section 4.10, Hydrology and Water Quality, of this EIR, the project would be required to prepare and implement a SWPPP during construction, in accordance with the Statewide Construction General Permit. This requires implementation of water quality best

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	management practice to ensure that water quality standards are met and that stormwater runoff from the construction work areas does not cause degradation of water quality in receiving water bodies. During project operation, the proposed detention basin would receive stormwater to promote water quality treatment and hydromodification management of stormwater runoff. Impacts to water quality would be less than significant.
Objective R12: Optimizing the use of water resources.	Consistent: Refer to the consistency analysis for Water Resources **Goal 1** above.
Policy R12.3: Develop new ways to capture and percolate storm water.	Consistent: Proposed stormwater infrastructure improvements would include the installation of proposed storm drains and catch basins which would flow into a combination of retention systems, storage galleries, and catch basins to help percolate storm water from the project site. In addition, the project would include development of a 63,500-cubic foot retention storage gallery, to be located within the public park, would consist of approximately 2,400 linear feet of 60-inch-diameter perforated pipe surrounded by gravel bed.
Objective R14: Ensuring adequate water availability for future growth in the City.	Consistent: The proposed project would achieve a net-zero impact on local water supplies through implementation of **PDF-UTL-1** (see Section 4.19.4). As discussed in Section 4.19, Utilities and Service Systems, impacts associated with existing water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years would be less than significant.
Objective R15: Conserving water during times of drought.	Consistent: The proposed project would achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19.4). Therefore, the proposed project would not increase demand of the City's water supply, including local groundwater. Additionally, as detailed in Section 4.19, Utilities and Service Systems, impacts associated with existing water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years would be less than significant.
Waste Management/Recycling	
Objective R20: Properly disposing toxic and hazardous waste.	Consistent: As discussed in Section 4.9, Hazards and Hazardous Materials, of this EIR, construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. Hazardous materials during operation of the proposed project would be limited to consumer products such as household cleaners, landscaping chemicals and fertilizers, and other substances associated with household and recreation

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	(neighborhood park) uses. The proposed project would be required to comply with all applicable federal, state, and local standards related to hazardous materials and wastes. Thus, impacts from hazardous waste would be less than significant.
Objective R21: Providing adequate waste disposal systems to meet the demands of existing and new development.	Consistent: As discussed in Section 4.19, Utilities and Service Systems, solid waste management services would be provided by Athens Services and the available capacity of the Scholl Canyon Landfill would be able to accommodate development allowed under the project.
Air Quality	
Objective R22: Attaining safe air standards.	Consistent: As determined in Section 4.3, Air Quality, of this EIR, the proposed project would result in less than significant impacts related to air quality.
Policy 22.1: Cooperate with the SCAQMD and incorporate the provisions of the AQMP.	Consistent: As discussed in Section 4.3, Air Quality, of this EIR, the proposed project would cooperate with the SCAQMD and would incorporate the provisions of the AQMP. Impacts related to air quality would be less than significant with implementation of **MM-AQ-1**.
Policy 22.2: Prohibit the development of land uses and land use practices which would contribute significantly to poor air quality.	Consistent: As determined in Section 4.3, Air Quality, of this EIR, the proposed project would not contribute significantly to poor air quality and impacts related to air quality would be less than significant with implementation of **MM-AQ-1**.
Policy 22.3: Establish controls and monitor uses in the City which contain operations or materials characterized by air pollutants which individually or cumulatively could significantly add to the air basin's degradation (e.g., furniture manufacturers using paints and finishes, automobile repair, printing, and reproduction, and dry cleaners).	Consistent: As determined in Section 4.3, Air Quality, of this EIR, the proposed project would not result in a cumulatively considerable increase in emissions within the air basin and impacts related to air quality would be less than significant.
Policy 22.4: Encourage and participate in regional initiatives and programs to improve the South Coast Air Basin's air quality.	Consistent: As discussed in Section 4.3, Air Quality, of this EIR, the proposed project would cooperate with the SCAQMD and would incorporate the provisions of the AQMP. Impacts related to air quality would be less than significant with implementation of **MM-AQ-1**.
Policy 23.5: Provide opportunities through appropriate zoning for the development of residential units in concert with commercial uses.	Consistent: The proposed project would establish the Specific Plan, which would establish the zoning and development standards to guide future development of single-family residential uses. No commercial uses are proposed. However, the change in the zoning would allow for residential development in an existing residential area with limited commercial uses. Therefore, the zoning change would allow for the project site to be developed with uses consistent with surrounding development.
Objective R24: Reducing fugitive dust generated from the use of gardening equipment and construction activity.	Consistent: As discussed in Section 4.3, Air Quality, of this EIR, the proposed project would implement various dust control strategies and would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Proposed construction

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	practices that would be employed to reduce fugitive dust emissions include watering of the active sites and unpaved roads two times per day depending on weather conditions and restricting vehicle speed on unpaved roads to 15 miles per hour.
Policy 24.2: Require dust abatement measures during grading and construction operations. This may include use of reclaimed water or other methods to control fugitive dust.	Consistent: As discussed in Section 4.3, Air Quality, of this EIR, the proposed project would implement various dust control strategies and would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Proposed construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites and unpaved roads two times per day depending on weather conditions and restricting vehicle speed on unpaved roads to 15 miles per hour.
Policy 24.3: Develop and enforce a fugitive dust control ordinance that regulates the following: visible dust emissions, soil stabilization, the carrying and tracking of dirt offsite, unpaved access and haul roads, storage piles and bulk materials, demolition, and dust control plans; the ordinance should include penalties to encourage compliance.	Consistent: As discussed in Section 4.3, Air Quality, of this EIR, the proposed project would implement various dust control strategies and would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Proposed construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites and unpaved roads two times per day depending on weather conditions and restricting vehicle speed on unpaved roads to 15 miles per hour. Impacts related to air quality would be less than significant with implementation of **MM-AQ-1**.
Chapter Three: Hazard Prevention	
Fire Safety	
Objective Hz1: Providing adequate service levels of fire protection that meets the needs of Sierra Madre residents, businesses and visitors.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, the Sierra Madre Fire Department (SMFD) has reviewed the project and has determined that it would not have a significant effect on service demands. Through payment of appropriate development fees by the project applicant, the proposed project would ensure adequate service levels of fire protection.
Policy Hz1.2: Promote public education about fire safety at home, in the community, and in the work place.	Consistent: The proposed project would be required to comply with the recommendations of the Fire Protection Plan (FPP). The FPP evaluates and identifies the potential fire risk associated with the project's land uses and identifies requirements for water supply, fuel modification and defensible space, access, building ignition and fire resistance, and fire protection systems. Requirements of the FPP would be incorporated as project design feature **PDF-WF-1**. Compliance with the FPP would promote fire safety.
Policy Hz1.3: Continue to coordinate the provision of fire services with all public safety service providers and monitor their adequacy and responsiveness to community needs.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, the SMFD has reviewed the project and has determined that it would not have a significant effect on service demands. Through payment of appropriate development fees by the project applicant, the proposed project would ensure adequate service levels of fire protection.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Objective Hz2: Providing adequate fire protection necessary for existing and future development.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, the SMFD has reviewed the project and has determined that it would not have a significant effect on service demands. Through payment of appropriate development fees by the project applicant, the proposed project would ensure adequate service levels of fire protection.
Policy Hz2.1: Continue to require all existing and new development to install and maintain adequate smoke detection systems.	Consistent: The proposed project would include smoke detection systems, required under California Building Code.
Policy Hz2.2: Continue to require all new development to install automatic fire sprinkler systems.	Consistent: The proposed project is located within a VHFHSZ and would meet all Fire Department regulations and applicable code requirements for building in these higher fire hazard areas, including as they pertain to automatic fire sprinkler systems.
Policy Hz2.3: Continue to require review of building plans by a Fire Captain.	Consistent: The SMFD would review the project and ensure compliance with the applicable fire and life safety regulations, codes, and ordinances as well as the SMFD Fire Prevention Standards for fire protection systems
Policy Hz2.4: Consider water availability in terms of quantity and water pressure for safety purposes when considering the size and location of new residential construction.	Consistent: The proposed project would achieve a net-zero impact on local water supplies through the purchase of supplemental water in order to offset the demand placed on existing supplies and provide supplemental water to the City, available to serve the public (see **PDF-UTL-1** in Section 4.19.4). As determined in Section 4.19, Utilities and Service Systems, of this EIR, there would be adequate water availability to meet the demand of the proposed project. Additionally, the proposed project would include a new water system within the planned roadways consisting of a network of mainlines for potable water delivery to the site. The SMFD has reviewed the project.
Policy Hz2.5: Assess the impacts of incremental increases in development density and related traffic congestion on fire hazards and emergency response time, and ensure through the development review process that new development will not result in a reduction of fire protection services below acceptable levels.	Consistent: The SMFD has reviewed the project and has determined that it would not have a significant effect on service demands. Through payment of appropriate development fees by the project applicant, the proposed project would ensure adequate service levels of fire protection.
Policy Hz2.6: Continue to require that new development provides adequate hydrants and show sufficient evidence that there is adequate water supply/fire flow and that it is available to accommodate the fire protection needs of new construction.	Consistent: The proposed project would meet all Fire Department regulations and applicable code requirements, including as they pertain to installation of fire hydrants. Additionally, as determined in Section 4.19, Utilities and Service Systems, of this EIR, there would be adequate water availability to meet the demand of the proposed project.
Policy Hz2.8: Develop vegetation management plans that manage chemise and chaparral to ensure adequate firebreaks, to provide adequate access for fire protection water systems, and access for firefighting.	Consistent: The proposed project would include fuel modification areas and proposed landscaping would be in accordance with the current Fuel Modification and Plant Selection Guidelines from the Los Angeles County Fire Department. Vegetation management would occur as required by Fire Department regulations and applicable code requirements.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Objective Hz4: Addressing emergency operations and disaster preparedness as a priority.	Consistent: As discussed in Section 4.17, Transportation, of this EIR, all construction activities including staging would occur in accordance with City requirements (such as SMMC Chapter 17.30, which requires that streets be maintained free and clear during construction), which would ensure that adequate emergency access to the project site in the event of an emergency or evacuation order would be provided during construction of the project. Additionally, the proposed project would be adequately served by emergency response services and provide emergency access throughout the project site, as described in Section 4.15, Public Services, of this EIR. Lastly, the proposed project would be required to comply with the recommendations of the FPP. The FPP evaluates and identifies the potential fire risk associated with the project's land uses and identifies requirements for water supply, fuel modification and defensible space, access, building ignition and fire resistance, and fire protection systems. Requirements of the FPP would be incorporated as project design feature **PDF-WF-1**.
Objective Hz5: Limiting fire hazard through brush and weed abatement.	Consistent: The proposed project would include fuel modification areas and proposed landscaping would be in accordance with the current Fuel Modification and Plant Selection Guidelines from the Los Angeles County Fire Department. Brush and weed abatement would occur as required by Fire Department regulations and applicable code requirements.
Policy Hz5.1: Mandate annual brush removal from April to June.	Consistent: The proposed project would include fuel modification areas and proposed landscaping would be in accordance with the current Fuel Modification and Plant Selection Guidelines from the Los Angeles County Fire Department. Brush removal would occur as required by Fire Department regulations and applicable code requirements.
Flood/Landslide	
Objective Hz6: Addressing potential flooding and landslide hazards on public and private property.	Consistent: As determined in Section 4.10, Hydrology and Water Quality, of this EIR, the project would maintain adequate stormwater conveyance as to not result in an increase of surface runoff that would result in flooding on or off site. Additionally, as discussed in Section 4.7, Geology and Soils, the proposed project would not result in landslide hazards.
Policy Hz6.1: Require that all new development incorporates sufficient measures to mitigate flood hazards, including the design of containment systems to capture stormwater runoff on-site, and site grading that minimizes stormwater runoff from increased impervious surfaces, thereby addressing impacts to on-site structures and adjacent properties.	Consistent: As determined in Section 4.10, Hydrology and Water Quality, of this EIR, the project would maintain adequate stormwater conveyance as to not result in an increase of surface runoff that would result in flooding on or off site.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy Hz6.2: Require that the landscape of open space areas provide the maximum permeable surface area to reduce site runoff, and prohibit the paving of a majority of these areas.	Consistent: The proposed project would introduce more impervious area would result in more surface runoff. However, the project would include a new stormwater drainage system that would assist in reducing runoff velocities. Additionally, the proposed neighborhood park would remain pervious, allowing percolation of water into the underlying soils. Lastly, the project would include landscaped parkways, tree plantings, landscaping throughout the project site, providing pervious area that would reduce surface runoff.
Objective Hz8: Maintaining adequate infrastructure to prevent flooding hazards.	Consistent: As determined in Section 4.10, Hydrology and Water Quality, of this EIR, the project would maintain adequate stormwater conveyance as to not result in an increase of surface runoff that would result in flooding on or off site.
Policy Hz8.1: Require that residential tract developers be responsible for construction of drainage/storm drain systems improvements that are compatible with City and County systems within or adjacent to their project site.	Consistent: The proposed project would include a new storm drainage system. A new 36-inch-diameter storm drain would be installed on the western portion of the site, which would run from the north to south and join an existing 36-inch-diameter storm drain located within North Sunnyside Avenue. The proposed drainage plan is provided in Figure 3-5 in Chapter 3.
Policy Hz8.2: Install required public storm drainage improvements.	Consistent: The proposed project would include a storm drainage system. A new 36-inch-diameter storm drain would be installed on the western portion of the site, which would run from the north to south and join an existing 36-inch-diameter storm drain located within North Sunnyside Avenue. The proposed drainage plan is provided in Figure 3-7 in Chapter 3.
Seismic Safety	
Objective Hz10: Assessing the viability of development based on seismic safety considerations.	Consistent: A geotechnical investigation was completed for the proposed project, included as Appendix E of this EIR. As discussed in Section 4.7, Geology and Soils, of this EIR, seismic safety has been adequately evaluated and all seismic related impacts would be less than significant.
Policy Hz10.2: Investigate the limitations on the location of new or altered residences and critical, sensitive and high occupancy facilities in areas near active faults, and consider conducting a comprehensive geologic investigation to show where active faults pose a hazard to structures.	Consistent: A geotechnical investigation was completed for the proposed project, included as Appendix E of this EIR. As discussed in Section 4.7, Geology and Soils, of this EIR, fault hazards have been adequately evaluated and all fault related impacts would be less than significant.
Objective Hz11: Minimizing to the extent possible the loss of life, serious injuries, and major social and economic disruption caused by the collapse of or severe damage to vulnerable buildings in an earthquake.	Consistent: A geotechnical investigation was completed for the proposed project, included as Appendix E of this EIR. As discussed in Section 4.7, Geology and Soils, of this EIR, earthquake hazards have been adequately evaluated and all earthquake related impacts would be less than significant.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy Hz 11.2: Encourage seismic review of buildings.	Consistent: A geotechnical investigation was completed for the proposed project, included as Appendix E of this EIR. As discussed in Section 4.7, Geology and Soils, of this EIR, seismic safety has been adequately evaluated and all seismic related impacts would be less than significant.
Objective Hz13.2: Adopt and maintain high standards for seismic performance of buildings, through prompt adoption and careful enforcement of the best available standards for seismic design.	Consistent: A geotechnical investigation was completed for the proposed project, included as Appendix E of this EIR. As discussed in Section 4.7, Geology and Soils, of this EIR, seismic safety has been adequately evaluated and all seismic related impacts would be less than significant. the project would adhere to the most current CBC standards with specific provisions pertaining to seismic load and design.
Noise	
Objective Hz14: Maintaining the quiet residential character of the City, free from excessive noise from transportation or fixed source generators.	Consistent: Noise impacts were analyzed in Section 4.13, Noise, of this EIR. As discussed therein, the proposed project would not result in excessive noise from transportation sources. The proposed project would implement mitigation measure **MM-NOI-1** to reduce construction related noise impacts to a less than significant level. The proposed project would also implement mitigation measure **MM-NOI-2** to reduce operational noise impacts related to residential HVAC systems to a less than significant level.
Policy Hz14.1: Formulate measures to mitigate noise impacts from mobile and stationary noise sources through compatible land use planning and the discretionary review of development projects.	Consistent: Noise impacts were analyzed in Section 4.13, Noise, of this EIR. As discussed therein, the proposed project would not result in excessive noise from transportation sources. The proposed project would implement mitigation measure **MM-NOI-1** to reduce construction related noise impacts to a less than significant level. The proposed project would also implement mitigation measure **MM-NOI-2** to reduce operational noise impacts related to residential HVAC systems to a less than significant level. Additionally, the proposed project would be compatible with surrounding land uses.
Policy Hz14.2: Identify and control the noise levels associated with transportation and general circulation patterns in the City to ensure the residential quality of the community.	Consistent: Noise impacts were analyzed in Section 4.13, Noise, of this EIR. As discussed therein, the proposed project would not result in excessive noise from transportation sources.
Policy Hz14.5: To the extent possible, protect schools, hospitals, libraries, churches, parks and recreational areas from excessive sound levels so as not to adversely affect their normal activities.	Consistent: Noise impacts were analyzed in Section 4.13, Noise, of this EIR. As discussed therein, the proposed project would not result in excessive noise from transportation sources. The proposed project would implement mitigation measure **MM-NOI-1** to reduce construction related noise impacts to a less than significant level. The proposed project would also implement mitigation measure **MM-NOI-2** to reduce operational noise impacts related to residential HVAC systems to a less than significant level. Therefore, the proposed project would not adversely affect schools, hospitals, libraries, churches, parks, or recreational areas due to excessive noise levels.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Objective Hz16: Minimizing the impacts of construction noise on adjacent uses.	Consistent: Noise impacts were analyzed in Section 4.13, Noise, of this EIR. As discussed therein, the proposed project would implement mitigation measure **MM-NOI-1** to reduce construction related noise impacts to a less-than-significant level.
Policy Hz16.1: Limit construction activities to reasonable weekday and weekend/holiday hours in order to reduce noise impacts on adjacent residences.	Consistent: Construction of the proposed project would be limited to reasonable weekday and weekend/holiday hours in accordance with this policy.
Policy Hz16.2: Require that construction activities incorporate feasible and practical techniques to minimize the noise impacts on adjacent uses	Consistent: Noise impacts were analyzed in Section 4.13, Noise, of this EIR. As discussed therein, the proposed project would implement mitigation measure **MM-NOI-1** to reduce construction related noise impacts to a less-than-significant level.
Chapter Four: Community Services	
Law Enforcement	
Policy C1.1: Provide professional police response and protection to the community by partnering with residents, business persons and visitors to the City.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, the Sierra Madre Police Department (SMPD) stated the proposed development would affect response times and service ratios under existing staff and facility conditions. However, payment of development fees by the project applicant, as required by Chapter 15.52 of the SMMC, would be used to offset the costs of increased personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives. Impacts to police services would be less than significant.
Policy C1.2: Assess the impact of increases in population on response time, calls for service and traffic through the development review process so law enforcement assets will not be degraded.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, (SMPD stated the proposed development would affect response times and service ratios under existing staff and facility conditions. However, payment of development fees by the project applicant, as required by Chapter 15.52 of the SMMC, would be used to offset the costs of increased personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives. Impacts to police services would be less than significant.
Policy C3.1: Evaluate on a continual basis the delivery of police services to monitor their adequacy and responsiveness to community needs.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, SMPD stated the proposed development would affect response times and service ratios under existing staff and facility conditions. However, payment of development fees by the project applicant, as required by Chapter 15.52 of the SMMC, would be used to offset the costs of increased personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives. Impacts to police services would be less than significant.

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
Policy C4.3: Maximize passive prevention measures for new and existing development through the development review process.	Consistent: As discussed in Section 4.15, Public Services, of this EIR, SMPD stated the proposed development would affect response times and service ratios under existing staff and facility conditions. However, payment of development fees by the project applicant, as required by Chapter 15.52 of the SMMC, would be used to offset the costs of increased personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives. Impacts to police services would be less than significant. The development fees required for this development would help offset the costs of increased personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives.
Recreation Services	
Objective C6: Providing quality recreation, leisure and social programs and facilities for the various segments of the Sierra Madre community	Consistent: The proposed project would include a publicly accessible neighborhood park.
Policy C8.1: Continue a park maintenance program to secure the existing nature and beauty of the City Parks and open space areas.	Consistent: The proposed project would include a publicly accessible neighborhood park, which would be maintained by the City of Sierra Madre, Landscape Maintenance District, or similar public Maintenance Assessment District.
Policy C8.3: Install and replace existing landscape with native and drought resistant plants in City parks where deterioration has occurred	Consistent: The proposed project would use fire-resistant and drought tolerant tree and plant species in landscaping.
Policy C8.4: Identify each recreational site with its name and encompassing facilities with signage visible to the public	Consistent: The proposed project would include signage in compliance with the design requirements and procedures found within Chapter 17.72, Signs, of the SMMC.
Objective C10: Increasing parkland and recreational facilities in the City.	Consistent: The proposed project would include a publicly accessible neighborhood park.
Policy C10.4: Require that all new commercial and residential subdivision developments provide open space areas on-site for passive or active recreation or contribute fees for public development of such uses.	Consistent: The proposed project would include a publicly accessible neighborhood park.
Objective C11: Coordinating the management of parks and recreation efforts throughout the City	Consistent: The proposed project would include a publicly accessible neighborhood park, which would be maintained by the City of Sierra Madre, Landscape Maintenance District, or similar public Maintenance Assessment District.
Policy C11.2: Maintain and update a maintenance and repair plan for existing and future City facilities.	Consistent: The proposed project would include a publicly accessible neighborhood park, which would be maintained by the City of Sierra Madre, Landscape Maintenance District, or similar public Maintenance Assessment District.
Transit Services	
Objective C30: Improving traffic safety.	Consistent: The proposed project would extend public access along North Sunnyside Avenue and include new Streets A, B, and C to provide circulation throughout the project site. Carter Avenue would also be improved and would provide secondary egress and ingress access to the

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	site, as well as internal circulation. As discussed in Section 4.17, Transportation, of this EIR, the proposed project would not result in new traffic hazards, including due to a geometric design feature.
Policy C30.2: Continue to evaluate measures, such as speed bumps, that reduce speeding.	Consistent: The proposed project would extend public access along North Sunnyside Avenue and include new Streets A, B, and C to provide circulation throughout the project site. Carter Avenue would also be improved and would provide secondary egress and ingress access to the site, as well as provide internal circulation. The project would implement street sections that slow traffic and create a safe and pleasant small neighborhood environment.
Policy C30.3: Maintain safety and efficient circulation without impacting the village atmosphere.	Consistent: The proposed project would extend public access along North Sunnyside Avenue and include new Streets A, B, and C to provide circulation throughout the project site. Carter Avenue would also be improved and would provide secondary egress and ingress access to the site, as well as provide internal circulation. The project would implement street sections that slow traffic and create a safe and pleasant small neighborhood environment.
Public Services	
Objective C31: Providing adequate water, wastewater/sewer, storm drainage, electrical, and telecommunications systems to meet the demands of new and existing development.	Consistent: As discussed in Section 4.19, Utilities and Service Systems, of this EIR, the proposed project would provide adequate water, wastewater, sewer, storm drainage, electrical, and telecommunications systems to meet the demand of the proposed project.
Policy C31.1: Provide for storm drainage improvements where existing systems are deficient.	Consistent: The proposed project would include a new storm drainage system. A new 36-inch-diameter storm drain would be installed on the western portion of the site, which would run from the north to south and join an existing 36-inch-diameter storm drain located within North Sunnyside Avenue. The proposed drainage plan is provided in Figure 3-7 in Chapter 3.
Policy C31.3: Require that new development be contingent upon the ability to be served by adequate sanitation collection and treatment, water, electrical and natural gas energy, telecommunication, storm drainage, and other supporting infrastructure.	Consistent: As discussed in Section 4.19, Utilities and Service Systems, of this EIR, the proposed project would be adequately served by sanitation collection and treatment, water, electrical, natural gas, energy, telecommunication, and storm drainage facilities.
Policy C31.4: Upgrade areas that are deficient and maintain lighting fixtures in good working condition.	Consistent: The proposed project would include adequate lighting as required by the SMMC.
Policy C31.5: Require that new development capture for percolation on site the maximum practical amount of storm water.	Consistent: The proposed project would include a new storm drainage system. A new 36-inch-diameter storm drain would be installed on the western portion of the site, which would run from the north to south and join an existing 36-inch-diameter storm drain located within North Sunnyside Avenue. The proposed drainage plan is provided

Table 4.11-1. Project's Consistency with City of Sierra Madre's General Plan Goal and Policies

General Plan Goals and Policy	Project Consistency
	in Figure 3-7 in Chapter 3. Proposed infrastructure improvements would also include catch basins which would flow into a combination of retention systems, storage galleries, and catch basins to help percolate storm water from the project site. In addition, the project would include development of a 63,500-cubic foot retention storage gallery, to be located within the public park, would consist of approximately 2,400 linear feet of 60-inch diameter perforated pipe surrounded by gravel bed.

Parks and Facilities Maintenance and Master Plan

The Parks and Facilities Maintenance and Master Plan helps meet the needs of the City of Sierra Madre's current and future residents and to build on the community's unique recreational facilities, parks, and trail assets. The Parks and Facilities Master Plan is intended to serve as a guide for future recreational facility and park improvements and acquisition. Another important purpose of the Parks and Facilities Master Plan is to represent the community's desires for a balance between parks, open space, and trails. Above all, the Parks and Facilities Maintenance and Master Plan seeks to contribute to a higher quality of life in Sierra Madre. The Parks and Facilities Master Plan outlines goals and priorities to help achieve improvements at existing parks and recreational facilities. Goals and priorities relevant to the project include the following (City of Sierra Madre 2012):

Bailey Canyon Wilderness Park

- The goal for this park is to maintain the area as a wilderness park with minimal improvements.

As previously mentioned, adoption of the Specific Plan would result in future development of an approximately 3.04-acre dedicated neighborhood public park at the southernmost portion of the project site (see Figure 3-3 in Chapter 3 of this EIR). The park's location along the southern boundary of the site provides enhanced connectivity to the Bailey Canyon Wilderness Park to the east. As such, the project would be consistent with the Park and Facilities Master Plan goal by providing improved access to Bailey Canyon Wilderness Park.

Community Forest Management Plan

The Community Forest Management Plan ensures the continuation and enhancement of the tree canopy for the beauty, wellbeing, livability, and long-term environmental health of the community of Sierra Madre. The City of Sierra Madre's mission to grow and perpetuate the community forest is embodied in the Community Forest Master Plan. This mission is expressed through these overarching goals (City of Sierra Madre 2014a):

- Conserve and expand tree canopy cover equal to no net loss, with a gradual increase over time.
- Foster increased public awareness and education regarding the environmental value of trees as green infrastructure.
- Promote increased shade-tree canopy for energy conservation, storm water capture, and improved air quality.
- Encourage species selection appropriate for local environmental conditions and sustainability.

- Preserve and enhance community aesthetics and property values through increased canopy cover and diversity.
- Apply best management practices for planting, maintaining, and responding to changed environmental conditions in the community forest.

Although various tress would be removed under the proposed project, the project would introduce new trees throughout the site, within the proposed public park, along proposed streets, and within the open space located in the northern portion of the project (see Figure 3-5, Conceptual Landscape Plan, in Chapter 3). Without mitigation for tree replacement, impacts to the Community Forest Management Plan would be **potentially significant (Impact LU-1).** However, as discussed in Section 4.4, Biological Resources, **MM-BIO-3** would be implemented and would require the project to adhere to the City's Tree Preservation and Protection Ordinance (Chapter 12.20), which identifies tree replacement requirements for tree removal associated with a development project. In total, up to ten protected trees would be removed for this project. Each will be replaced on a 1:1 basis, at a minimum with a 24-inch box tree, with a like species. The specific location of individual mitigation tree plantings on site would be addressed in the mitigation planting plan or landscape design plan prepared for the site. In addition, all mitigation tree plantings shall be subject to a 5-year monitoring effort by an independent third-party certified arborist. The monitoring effort shall consider growth, health, and condition of the subject trees to evaluate success. The monitoring effort may result in a recommendation of remedial actions should any of the tree plantings exhibit poor or declining health. Thus, with adherence to **MM-BIO-3** and implementation of the project's landscape plan, the project would be consistent with the goals outlined in the Community Forest Management Plan.

Conclusion

As demonstrated throughout the analysis for Threshold 2, with adherence to **MM-BIO-3,** the proposed project would not result in 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. Impacts would be **less than significant.**

4.11.6 Mitigation Measures

The following mitigation measure will be implemented during and prior to project construction in order to reduce potential project-related impacts to land use and planning to a less-than-significant level.

MM-BIO-3 **Protected Tree Replacement.** [See Section 4.4.6 in Section 4.4, Biological Resources, for details.]

4.11.7 Level of Significance After Mitigation

Impacts related to land use and planning would be **less than significant**.

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4.12 Mineral Resources

This section describes the existing mineral resources conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.12.1 Existing Conditions

The California Geological Survey (CGS) and Department of Conservation (DOC) classify the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975. The State Geologist is responsible for classifying areas within California that are subject to urban expansion or other irreversible land uses. The State Geologist is also responsible for classifying Mineral Resources Zones (MRZs) to record the presence or absence of significant resources in the state based on California Geological Survey data. According to the City of Sierra Madre (City) General Plan Environmental Impact Report (EIR), the entire City is located in areas mapped MRZ-3 and MRZ-4, defined as areas containing mineral deposits, the significance of which cannot be evaluated from available data, and areas where available information is inadequate for assignment to any other MRZ zone, respectively (City of Sierra Madre 2015). The project site is located entirely within an area mapped as MRZ-3 (DOC 1994).

4.12.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to mineral resources relevant to the proposed project.

State

Surface Mining and Reclamation Act of 1975

As mandated by the California Surface Mining and Reclamation Act, the California State Mining and Geology Board classifies the state's mineral resources with the MRZ system. This system includes identification of presence/absence conditions for meaningful sand and gravel deposits.

The classification system emphasizes Portland Cement Concrete aggregates, which are used in manufacturing strong, durable concrete, and have stricter specifications than other aggregate materials.

Mineral land classifications for the region are designated as follows (California PRC, Sections 2710–2796):

- **MRZ-1** – Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- **MRZ-2** – Areas where adequate information indicates that significant mineral deposits are present or where it is judged that there is a high likelihood for their presence.
- **MRZ-3** – Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4** – Areas where available information is inadequate for assignment to any other MRZ zone.

Local

There are no local plans, policies, or ordinances related to mineral resources relevant to the proposed project.

4.12.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to mineral resources are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to mineral resources would occur if the project would:

1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

4.12.4 Project Design Features

There are no project design features that apply to mineral resources.

4.12.5 Impacts Analysis

1. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

As described in Section 4.12.1, Existing Conditions, the project site is located within an area mapped as MRZ-3. MRZ-3 indicates areas of undetermined mineral resource significance (DOC 1994). Further, the project site is not zoned for mineral resource extraction, and the nature of the surrounding land uses, including residential uses located to the south and east, and the Mater Dolorosa Retreat Center, located to the north, would preclude any potential mineral resource extraction operation from being feasible on the project site even if mineral resources were identified. Therefore, because there are no known mineral resources within the City or on the project site, and due to the developed nature of the surrounding area, the proposed project would not result in the loss of availability of a known mineral resource. Impacts would be **less than significant.**

2. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

As discussed above under Threshold 1, the project site is located within an area mapped as MRZ-3, which includes areas of undetermined mineral resource significance. As such, there are no known mineral resources on the project site. Additionally, no mineral resources are identified within the City's General Plan and there are no locally important resource recovery sites in the City. In addition, the developed nature of the site's surroundings would preclude any potential mineral resource extraction operation from being feasible on the project site even if mineral resources were identified. Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource recovery site. Impacts would be **less than significant.**

4.12.6 Mitigation Measures

No mitigation measures would be required.

4.12.7 Level of Significance After Mitigation

Impacts related to mineral resources would be less than significant. No mitigation measures would be required.

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4.13 Noise

This section describes the existing noise conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential noise and vibration impacts, and identifies mitigation measures related to implementation of the proposed project.

4.13.1 Existing Conditions

4.13.1.1 Noise Factors and Terminology

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels, which de-emphasizes the low-frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of dBA.

Because sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dB increase in the noise level. Changes in a community noise level of less than 3 dB are not typically noticed by the human ear (Caltrans 2013). Changes from 3 to 5 dB may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dB increase is readily noticeable. The human ear perceives a 10 dB increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. The equivalent continuous sound level (L_{eq}), also referred to as the average sound level, is a single number representing the fluctuating sound level in A-weighted decibels (dBA) over a specified period of time. It is a sound-energy average of the fluctuating level and is equal to a constant unchanging sound of that dB level. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, The CNEL scale represents a time-weighted 24-hour average noise level based on the A-weighted sound level. CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dB to the average sound levels occurring during the evening hours and 10 dB to the sound levels occurring during nighttime hours. Additional noise definitions are provided below.

Ambient Noise Level. The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

A-Weighted Sound Level (dBA). The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with community equivalent sound level.

Community Noise Equivalent Level (CNEL). CNEL is the A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during the nighttime hours (10 p.m.–7 a.m.) and 5 dB added to the sound during the evening hours (7 p.m.–10 p.m.).

Day Night Average Sound Level (DNL or L_{dn}). Similar to the CNEL noise metric, except that no penalty is added during the evening hours (7 p.m.–10 p.m.). Typically, the CNEL and L_{dn} noise metrics vary by approximately 1 decibel or less and are often considered to be functionally equivalent.

Decibel (dB). The decibel is a unit for measuring sound pressure level and is equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micropascals.

4.13.1.2 Noise-Sensitive Land Uses

Land use types considered to be noise-sensitive include residences, colleges, schools and universities, churches, libraries, hospitals, rest homes, open space/recreation areas, and long- term medical or mental health care facilities, retreat centers or other places in which an expectation of relative quiet is customary.

4.13.1.3 Project Site

The project site is located at 700 North Sunnyside Avenue, in the northwestern portion of the City of Sierra Madre (City), within the County of Los Angeles (County), California. The northwestern portion of the project site borders the City of Pasadena, and the San Gabriel Mountains are located approximately 460 feet north of the site. The site is surrounded by Bailey Canyon and the Bailey Canyon Wilderness Park to the east, and existing single-family residential development to the south and west, and the Mater Dolorosa Retreat Center, which is primarily used to host religious and silent retreats and other activities, to the north

Noise measurements were conducted on and near the project site on October 21, 2020,[1] to characterize the existing ambient noise environment. Table 4.13-1 provides the locations, date, and times these noise measurements were performed.

[1] The noise measurements were conducted approximately 7 months into the COVID-19 pandemic, during which state and regional public health orders limiting gatherings, school openings, non-essential travel, and other activities intended to control the spread of the virus were in effect. Consequently, ambient noise levels (such as from traffic) may have been lower than they otherwise would be. However, to the extent that such levels are compared to noise from the proposed project, lower ambient noise levels would result in a larger projected noise increase from the project; thus, the results would be conservative.

Table 4.13-1. Measured Community Noise Levels

Receptor	Location/Address	Date (mm/dd/yy)	Time (hh:mm)	L_{eq} (dBA)	L_{max} (dBA)
ST1	On-site, southwestern corner of project site, adjacent to existing residences	10/20/20	9:29–9:44 a.m.	52.7	69.1
ST2	Mater Dolorosa Retreat Center, at Fountain Plaza	10/20/20	10:03–10:18 a.m.	55.4	70.6
ST3	Bailey Canyon Park, west side	10/20/20	10:42–10:58 a.m.	52.1	58.3
ST4	Adjacent to residence at 390 Carter Avenue	10/20/20	11:05–11:20 a.m.	56.1	75.9
ST5	Adjacent to residence at 441 North Sunnyside Avenue	10/20/20	11:29–11:45 a.m.	56.1	74.4

Source: Appendix G.
L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval; dBA = A-weighted decibels; ST = short-term noise measurement locations.

The five short-term (ST) noise measurement locations were selected to represent sample existing noise-sensitive receivers on and near the project site. These locations are depicted as receivers ST1–ST5 in Figure 4.13-1, Noise Measurement and Modeling Locations. The measured energy-averaged (L_{eq}) and maximum (L_{max}) noise levels at these field survey locations are provided in Table 4.13-1. The primary noise sources at the sites consisted of light traffic along adjacent roadways, distant traffic, the sounds of rustling leaves, distant conversations, and birdsong. The measured sound levels ranged from approximately 52.1 dBA L_{eq} at ST3 to 56.1 dBA L_{eq} at ST4 and ST5. More details of the collected noise measurement data can be found in Appendix G.

4.13.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal noise standards that would directly regulate environmental noise during construction and operation of the proposed project. The following is provided because guidance summarized herein is used or pertains to the analysis.

Federal Transit Administration

In its Transit Noise and Vibration Impact Assessment guidance manual, the Federal Transit Administration (FTA) provides guidance and methodology related to construction noise and groundborne vibration which is used in this analysis as detailed in Section 4.13.5, Impacts Analysis.

State

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations sets standards which new development in California must meet. According to Title 24, interior noise levels are not to exceed 45 dB CNEL for new multifamily residences, hotels, and other attached residences.

Title 24 also requires that an interior acoustical study demonstrating that interior noise levels due to exterior sources will be less than or equal to 45 CNEL be performed for affected multifamily structures and hotels that are exposed to exterior noise levels in excess of 60 CNEL.

California Department of Health Services Guidelines

The State Department of Health Services has developed guidelines of community noise acceptability for use by local agencies (OPR 2017). Selected relevant levels are listed here:

- Below 60 dBA CNEL: normally acceptable for low-density residential use
- 50 to 70 dBA: conditionally acceptable for low-density residential use
- Below 65 dBA CNEL: normally acceptable for high-density residential use and transient lodging
- 60 to 70 dBA CNEL: conditionally acceptable for high-density residential, transient lodging, churches, educational, and medical facilities

The normally acceptable exterior noise level for transient lodging use is up to 65 dBA CNEL. Conditional acceptable exterior noise levels range up to 70 dBA CNEL for transient lodging.

California Department of Transportation

In its Transportation and Construction Vibration Guidance Manual, the California Department of Transportation (Caltrans) recommends a vibration velocity threshold of 0.2 inches per second (ips) peak particle velocity (PPV) (Caltrans 2020) for assessing "annoying" vibration impacts to occupants of residential structures. Although this Caltrans guidance is not a regulation, it can serve as a quantified standard in the absence of such limits at the local jurisdictional level. Similarly, thresholds to assess building damage risk due to construction vibration vary with the type of structure and its fragility but tend to range between 0.2 ips and 0.4 ips PPV for typical residential structures (Caltrans 2020).

Local

The proposed project would be located in the City of Sierra Madre, but there are nearby noise-sensitive receptors in the City of Pasadena, located directly west of the site. City of Sierra Madre noise standards would be applicable to the proposed project. City of Pasadena noise standards are provided for informational and contextual purposes.

City of Sierra Madre General Plan

In its General Plan Technical Background Report (City of Sierra Madre 2015), the City has identified noise compatibility standards for siting new noise-sensitive land uses within the City. The noise compatibility standards provide planners with a tool to gauge the compatibility of new land uses relative to existing and future noise levels. Table 4.13-2 presents the City's noise compatibility criteria (taken from City of Sierra Madre 2015).

Table 4.13-2. Land Use Compatibility for Community Noise Exposure

Land Uses	CNEL (dBA)						
	55	*60*	*65*	*70*	*75*	*80*	
Residential – Low Density Single Family, Duplex, Mobile Homes							
Residential – Multiple Family							
Transient Lodging, Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Businesses, Commercial and Professional							

Table 4.13-2. Land Use Compatibility for Community Noise Exposure

Land Uses	CNEL (dBA)						
	55	*60*	*65*	*70*	*75*	*80*	
Industrial, Manufacturing, Utilities, Agricultural							

Source: City of Sierra Madre 2015.

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Clearly Unacceptable: New construction or development should generally not be undertaken.

The City of Sierra Madre General Plan, Hazard Prevention chapter, has established the following objectives and policies with regard to noise (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Objective Hz14: Maintaining the quiet residential character of the City, free from excessive noise from transportation or fixed source generators.

Policy Hz14.1: Formulate measures to mitigate noise impacts from mobile and stationary noise sources through compatible land use planning and the discretionary review of development projects.

Policy Hz14.2: Identify and control the noise levels associated with transportation and general circulation patterns in the City to ensure the residential quality of the community.

Policy Hz14.5: To the extent possible, protect schools, hospitals, libraries, churches, parks and recreational areas from excessive sound levels so as not to adversely affect their normal activities.

Objective Hz16: Minimizing the impacts of construction noise on adjacent uses.

Policy Hz16.1: Limit construction activities to reasonable weekday and weekend/holiday hours in order to reduce noise impacts on adjacent residences.

Policy Hz16.2: Require that construction activities incorporate feasible and practical techniques to minimize the noise impacts on adjacent uses.

City of Sierra Madre's Code of Ordinances

Additionally, the City of Sierra Madre's Code of Ordinances (i.e., Sierra Madre Municipal Code) establishes noise standards for non-transportation noise sources through their Noise Ordinance (Title 9, Chapter 9.32). The City's Noise Ordinance is designed to limit noise generated on a property from adversely affecting noise-sensitive land uses.

Noise generated at residential properties is prohibited from exceeding existing ambient noise levels by more than 6 dB; noise levels generated at commercial and industrial properties is prohibited from exceeding existing ambient noise levels by more than 8 dB.

Noise generated on public property (e.g., parks, schools) is prohibited from generating more than 15 dB above the local ambient noise level at a distance of 25 feet or more; Sound-amplifying equipment and special events noise is prohibited from exceeding 60 dBA at a distance of 50 feet from the source without an exemption issued by the City Manager (Section 9.32.050, Public Property Noise Limits).

The Sierra Madre Municipal Code provides exemptions (Section 9.32.060, Special Exception Provisions) for certain noise sources and for noise generated during the daytime hours when people are generally less sensitive to noise. The noise from any noise source is considered exempt from the maximum permissible noise levels (i.e., 6 dB above ambient levels at residential properties and 8 dB above ambient levels at commercial properties) provided that noise occurs between the hours of 7:00 a.m. and 9:00 p.m. Monday through Saturday or 10:00 a.m. and 6:00 p.m. on Sundays and federal holidays and does not produce noise levels that exceed 80 dBA at a distance of 25 feet (Section 9.32.060[A]).

Noise from construction authorized by a valid city permit is exempt between the hours of 7:00 a.m. and 7:00 p.m. daily, except Sundays and holidays when the exemption is between 10:00 a.m. and 6:00 p.m., provided the noise level at any point outside the property plane does not exceed 85 dBA (Section 9.32.060[C]).

City of Pasadena General Plan

The City of Pasadena has established guidelines and standards in its General Plan (City of Pasadena 2002). The City of Pasadena General Plan Noise Element recognizes that construction activity is a source of occasional temporary nuisance noise throughout the City and that these and other such nuisance noises are common to cities and, because of their unpredictable nature, must be addressed on a case-by-case basis. The following policies are applicable to the project:

Policy 7b: The City will encourage limitations on construction activities adjacent to sensitive noise receptors.

Policy 7c: The City will encourage construction and landscaping activities that employ techniques to minimize noise.

City of Pasadena Municipal Code

Section 9.36.050 – General Noise Sources

Section 9.36.050 states, "It is unlawful for any person to create, cause, make or continue to make or permit to be made or continued any noise or sound which exceeds the ambient noise level at the property line of any property by more than 5 decibels." Adjustments are made to the allowable noise level for steady audible tones, repeated impulsive noise, and noise occurring for limited time periods.

Section 9.36.070 – Construction Projects

A. No person shall operate any pile driver, power shovel, pneumatic hammer, derrick power hoist, forklift, cement mixer or any other similar construction equipment within a residential district or within a radius of 500 feet therefrom at any time other than as listed below:
   1. From 7:00 AM to 7:00 PM Monday through Friday;
   2. From 8:00 AM to 5:00 PM on Saturday; and
   3. Operation of any of the listed construction equipment is prohibited on Sundays and holidays.

B. No person shall perform any construction or repair work on buildings, structures or projects within a residential district or within a radius of 500 feet therefrom in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance at any time other than as listed below:
   1. From 7:00 AM to 7:00 PM Monday through Friday;
   2. From 8:00 AM to 5:00 PM on Saturday; and
   3. Performance of construction or repair work is prohibited on Sundays and holidays.

C. For purposes of this section, holidays are New Year's Day, Martin Luther King Jr. Day, Lincoln's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, and Christmas.

Section 9.36.080 – Construction Equipment.

It is unlawful for any person to operate any powered construction equipment if the operation of such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from such equipment.

4.13.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to noise are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to noise would occur if the project would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Result in generation of excessive groundborne vibration or groundborne noise levels.
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, expose people residing or working in the project area to excessive noise levels.

In light of these significance criteria, this analysis uses the following standards to evaluate potential noise and vibration impacts.

- **Construction noise** – Consistent with Chapter 9.32 of the City's Noise Ordinance, construction activity noise emission at or beyond the property line of the source would result in a significant impact if it exceeds 80 dBA hourly L_{eq} at a distance of 25 feet for any allowable construction hour or 85 dBA L_{eq} at or beyond a noise-sensitive receiver's property boundary.

- **Off-site project-attributed transportation noise** – Guidance regarding the determination of a substantial permanent increase in transportation noise levels in the project vicinity above existing levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

  The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn} (and, by extension, CNEL[2]). The changes in noise exposure that are shown in Table 4.13-3 are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources.

Table 4.13-3. Measures of Substantial Increase for Community Noise Sources

Ambient Noise Level Without Project (L_{dn}/CNEL)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dB	+ 5 dB or more
60–65 dB	+ 3 dB or more
>65 dB	+ 2 dB or more

Source: FICON 1992.

- **On-site project-attributed stationary noise** – A noise impact would be considered significant if noise from typical operation of HVAC and other electro-mechanical systems or other operational noise associated with the project resulted in an increase in ambient noise levels of more than 6 dBA within the City of Sierra Madre.
- **Construction vibration** – Guidance from Caltrans indicates that a vibration velocity level of 0.2 ips PPV received at a structure would be considered annoying by occupants within (Caltrans 2020). As for the receiving structure itself, aforementioned Caltrans guidance discussed in Section 4.13.2, Relevant Plans, Policies, and Ordinances, recommends that a vibration level of 0.2 ips PPV would represent the threshold for "architectural" building damage risk.

4.13.4 Project Design Features

There are no project design features that apply to noise.

[2] As discussed in Section 4.13.1, the L_{dn} and CNEL noise metrics are very similar and often used interchangeably.

4.13.5 Impacts Analysis

1. ***Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Construction

Construction noise and vibration are temporary phenomena. Construction noise and vibration levels vary from hour to hour and day to day, depending on the equipment in use, the operations performed, and the distance between the source and receptor.

Equipment that would be in use during construction would include, in part, graders, backhoes, dozers, loaders, cranes, forklifts, pavers, rollers, and air compressors. The typical maximum noise levels for various pieces of construction equipment at a distance of 50 feet are presented in Table 4.13-4. However, construction equipment usually operates in alternating cycles of full power and low power, producing time-averaged noise levels that are thus less than the maximum noise level emitted during instances of full-power operation. The average sound level of construction activity also depends on the amount of time that the equipment operates on site and the intensity of construction activities during that time.

Table 4.13-4. Typical Construction Equipment Maximum Noise Levels

Equipment Type	Typical Equipment (L_{max}, dBA at 50 Feet)
All other equipment >5 horsepower	85
Backhoe	78
Compressor (air)	78
Crane	81
Dozer	82
Excavator	81
Front-end loader	79
Generator	72
Grader	85
Man lift	75
Paver	77
Roller	80
Scraper	84
Welder/torch	73

Source: FHWA 2008.
L_{max} = maximum sound level; dBA = A-weighted decibels.

Per Table 4.13-4, the maximum noise level for an individual piece of construction equipment anticipated for this development project would be approximately 85 dBA at 50 feet.

Project construction would take place both near and far from adjacent, existing noise-sensitive uses. For example, some construction activity phases near the southern and western project site boundaries would take place within approximately 25 feet of existing residential property boundaries, as well as within approximately 75 feet of the retreat center to the north. But during other construction phases, the same noise-sensitive receptors would be

further away from operating equipment and processes. For these reasons and for purposes of this assessment, construction noise is predicted for two different conditions as follows:

- Conservatively, construction noise is predicted at the noise-sensitive receptor boundary when the distance between it and one or more pieces of equipment or processes for each phase is expected to be shortest. Since construction equipment is usually mobile, and because equipment cannot be "stacked" at the same nearest position to a receptor at the same time, equipment distances vary but are located relatively near the project boundary.
- In a manner similar to the "general assessment" construction noise prediction method described by FTA guidance (FTA 2018), one can assume that—on average—all construction activities associated with a particular phase would be represented geographically by an acoustic centroid, which (because of the size of the project site) would be approximately 500 to 550 feet from the closest existing noise-sensitive land uses. This acoustic centroid represents the average position of mobile construction equipment and ongoing processes across the entire project site.

The FHWA Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest noise-sensitive land use. Although the RCNM was funded and promulgated by the FHWA, it is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are often used for other types of construction. Input variables for the predictive modeling consist of the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of time within a specific time period, such as an hour, when the equipment is expected to operate at full power or capacity and thus make noise at a level comparable to what is presented in Table 4.13-4), and the distance from the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis.

Estimated noise levels from the listed major construction phases were predicted for the nearest noise-sensitive land use, as presented in Table 4.13-5. The details of these calculations with respect to the shortest phase-to-receptor and acoustic centroid to receptor distance inputs are provided in Appendix G.

As presented in Table 4.13-5, during typical periods of construction, when construction activities would be distributed around the project site, construction noise would not exceed the applicable significance threshold of 85 dBA L_{eq}. However, when the predictive analysis focuses on the estimated construction noise levels for the shortest expected equipment-to-receptor distances by phase, estimated noise levels are predicted to be higher. For example, Table 4.13-5 shows that such predicted noise levels are as high as 88 dBA L_{eq} at the nearest existing residential property lines (as close as 25 feet away) when remedial and mass excavation, finish grading and surface improvement (i.e., paving) activities take place near the residences along the western and southern project boundary, and as high as 81 dBA L_{eq} at the Mater Dolorosa Retreat Center to the north. For these instances when operation of construction equipment and processes are sufficiently proximate to cause activity noise levels to exceed 85 dBA L_{eq}, the project would exceed the City of Sierra Madre threshold for construction noise exposure.

Although nearby off-site residences in the community surrounding the project would be exposed to elevated construction noise levels, the increased noise levels would typically be relatively short term. It is anticipated that construction activities associated with the project would take place within the allowable hours of the City of Sierra Madre (7:00 a.m. to 9:00 p.m. Monday through Saturday or 10:00 a.m. and 6:00 p.m. on Sundays and federal

holidays). In the event that construction is required to extend beyond these times, extended hours permits would be required and would be obtained by the applicant.

If work were to occur outside of the allowable hours, annoyance or sleep disturbance could result from construction noise; also, due to the relatively limited distance to existing adjacent residences, construction noise annoyance could result even during daytime hours. Regardless, since typical construction noise during allowable daytime hours would exceed the City's 85 dBA L_{eq} threshold and would be higher than existing ambient daytime noise levels when construction takes place near the project's southern and western boundaries, temporary construction-related noise impacts would be considered **potentially significant** (**Impact NOI-1**).

Table 4.13-5. Construction Noise Levels at Noise-Sensitive Uses

Off-Site Receptor Location	Noise-Sensitive Land Use	Distance from Construction Activity to Noise Receptor (feet)	Estimated Construction Noise Levels (dBA $L_{eq\ 8\text{-}hr}$)									Exceed Significance Threshold (80 dBA L_{eq} at 25 feet or 85 dBA L_{eq} at Property Line)?
			Clear and Grub	*Remedial & Mass Excavation*	*Balance Site (Grading)*	*Finish Grading*	*Building Construction*	*Wet Utilities*	*Dry Utilities*	*Surface Improvements*	*Architectural Coating*	
West and south of the project	Single-family residences	Nearest Construction Activity/ Receiver Distance (25)	**87**	**88**	**81**	**88**	80	**85**	**83**	**88**	80	**Yes**
		Typical Construction Activity/ Receiver Distance (500)	64	70	55	70	70	70	63	66	54	No
East of the project	Bailey Canyon Park	Nearest Construction Activity/ Receiver Distance (120)	75	78	68	78	78	78	72	76	66	No
		Typical Construction Activity/ Receiver Distance (550)	63	70	54	70	70	70	62	65	53	No
North of the project	Mater Dolorosa Retreat Center	Nearest Construction Activity/ Receiver Distance (75)	79	81	72	81	81	81	75	79	73	No
		Typical Construction Activity/ Receiver Distance (500)	64	70	55	70	70	70	63	66	64	No

Source: Appendix G
Notes: dBA L_{eq}: Average noise energy level. $L_{eq\ 8\text{-}hr}$ noise level is assumed to be the same as the 1-hour noise exposure level.
Bolded numbers indicate an exceedance of the applicable construction noise threshold.

Operational

Off-Site Traffic Noise

The project would result in the creation of additional vehicle trips on local arterial roadways (i.e., North Sunnyside Avenue, Sierra Madre Boulevard, North Michillinda Avenue), which could result in increased traffic noise levels at adjacent noise-sensitive land uses. In particular, the project would create additional traffic along North Sunnyside Avenue, Sierra Madre Boulevard, and North Michillinda Avenue. As discussed in Section 4.17, Transportation, of this Environmental Impact Report, the proposed project would add 396 total average daily trips to the local roadway network

The City's General Plan Hazards Element establishes the following objective (Objective Hz14): "Maintaining the quiet residential character of the City, free from excessive noise from transportation or fixed source generators." However, no numerical standard is provided; therefore, the FICON noise guidance (referenced in Section 4.13.3, Thresholds of Significance, and shown in Table 4.13-3) is used.

Potential noise effects from vehicular traffic were assessed using the Federal Highway Administration's Traffic Noise Model Version 2.5 (FHWA 2004). Information used in the model included the roadway geometry, existing (year 2020), existing (year 2020) plus project, future year (2025) without project, and future year (2025) plus project traffic volumes and posted traffic speeds. Noise levels were modeled at representative noise-sensitive receivers ST1, ST2, ST5, and M1–M3, as shown in Figure 4.13-1. The receivers were modeled to be 5 feet above the local ground elevation. The noise model results are summarized in Table 4.13-6. Based on results of the model, implementation of the project would not result in readily perceptible increases in traffic noise.

Table 4.13-6. Traffic Noise Levels for Local Roadways Under Existing, Existing plus Project, Future, and Future plus Project Scenarios (dBA CNEL)

Receiver Location	Existing	Existing + Project	Future (Year 2025)	Future (Year 2025) + Project	Maximum Noise Level Increase (dB)
ST1 – On Site; Southwest Side	53	56	53	56	3
ST2 – Mater Dolorosa Retreat Center	51	54	51	54	3
ST5 – North Sunnyside Avenue	57	60	57	60	3
M1 – Michillinda Avenue North of Sierra Madre Blvd.	68	68	68	68	0
M2 – Michillinda Avenue South of Sierra Madre Blvd.	69	69	69	69	0
M3 – Sierra Madre Blvd. East of Michillinda Avenue	66	66	66	66	0

Source: Appendix G

Table 4.13-6 shows that at all six listed representative receivers, the addition of project traffic to the roadway network would result in a maximum noise level increase of 3 dB CNEL. This noise level increase is less than what would be considered to be a substantial increase using FICON thresholds as shown in Table 4.13-3. Furthermore, at receiver locations anticipated to experience an increase in noise levels, the existing with project and future with project noise levels would continue to be compatible with City of Sierra Madre, California Code of Regulations Title

24 and California Department of Health Services guidelines for noise/land use compatibility. Thus, project-related off-site traffic noise increases affecting existing residences in the vicinity would be **less than significant**.

Interior Noise Impact

While current CEQA noise-related guidelines do not require an assessment of exterior-to-interior noise intrusion or noise exposure to occupants of newly created residences or non-residential uses attributed to the development of the project, the State requires that interior noise levels not exceed a CNEL of 45 dB within residences. Typically, with the windows open, building shells provide approximately 15 dB (i.e., an average of 12–18 dB [OPR 2017]) of noise reduction; while with windows closed residential construction generally provides a minimum of 25 dB attenuation (FHWA 2011). Therefore, rooms exposed to an exterior CNEL not greater than 60 dB would result in an interior background CNEL of 45 dB or less, even with open windows. The state Building Code recognizes this relationship and, therefore, requires interior noise studies when the exterior noise level is projected to exceed 60 dBA L_{dn}.

The data shown in Table 4.13-5 indicates that the future with project on-site noise levels (as represented by Receiver ST1) would range up to approximately 56 dBA CNEL at the proposed residences fronting on North Sunnyside Avenue. The unmitigated interior noise levels within the habitable rooms of these dwelling units would therefore comply with the 45 dBA CNEL noise criterion; no subsequent interior noise analysis would be required for the proposed residences.

At the Mater Dolorosa Retreat Center, the future with project noise level near the Mater Dolorosa Retreat Center's southern boundary (as represented by Receiver ST2) is estimated to be approximately 54 dBA CNEL with the proposed project. The unmitigated interior noise levels within the habitable rooms of the Mater Dolorosa Retreat Center (which are located further from the roadway) would be lower. Therefore, the interior noise levels would comply with the 45 dBA CNEL noise criterion.

At the existing residences located along North Sunnyside Avenue, the future with project noise level (as represented by Receiver ST5) is estimated to be approximately 60 dBA CNEL with the proposed project. The unmitigated interior noise levels within the habitable rooms of these dwelling units would therefore comply with the 45 dBA CNEL noise criterion.

At the existing residences and other land uses along Michillinda Avenue and Sierra Madre Boulevard (represented by Receivers M1–M3), the exterior future with project noise levels are estimated to increase by 0 dB, when rounded to whole numbers. The traffic noise associated with the proposed project would not cause or exacerbate an exceedance of interior noise standards at residences or other land uses along arterial roadways in the project vicinity. Noise impacts associated with interior noise levels would be **less than significant**.

Stationary On-Site Noise Sources

The construction of new residences within the project site would result in the addition of noise-producing mechanical equipment in the form of heating, ventilation, and air conditioning (HVAC) units. Also, the project would include a public neighborhood park.

Residential HVAC Operation Noise

For purposes of this analysis, each of the 42 detached single-family homes is anticipated to include an HVAC system, with the outdoor condenser component of the system assumed to be located at ground level adjacent to

the home's rear or side wall. Based on the project site, it is further assumed that the minimum distance from any one of the condenser units to the nearest off-site noise-sensitive receiver is 25 feet. Assuming that each condenser unit has a sound power level[3] of 72 dBA[4] (Carrier 2014), the sound pressure level at a distance of 25 feet would be approximately 47 dBA L_{eq} (operated continuously). The measured ambient noise levels in and adjacent to the project site (ST1 through ST3) ranged from approximately 52 to 55 dBA L_{eq}. When the 47 dBA L_{eq} noise level is added to the existing ambient noise levels of 52 to 55 dBA L_{eq}, the resultant combined noise level would be approximately 53 to 56 dBA L_{eq} (i.e., an increase of approximately 1 dB). Two adjacent residences with their HVAC systems running would result in a combined increase above existing ambient noise levels of approximately 2 dB. Thus, the noise levels with the assumed relatively quiet HVAC equipment would not result in a 6 dB increase; however, there is a wide range of noise levels produced by various residential HVAC systems. For this reason, residential HVAC operation noise is considered **potentially significant impact (Impact NOI-2)**.

Neighborhood Park

The proposed project would also include an approximately 3.04-acre dedicated neighborhood public park at the southernmost portion of the project site (see Figure 3-3, Proposed Park Conceptual Plan, in Chapter 3, Project Description, of this Environmental Impact Report). The proposed park would feature resilient play surfacing, a slope slide, a play structure and features, seat walls, benches, picnic areas, large turf areas, a small (seven-space) parking lot, decomposed granite trail, and a water quality treatment and detention basin.. With the exception of the play structure, the park usage would be passive in nature, and noise levels would be relatively low and in keeping with the surrounding community. No performance spaces, restrooms, courts, or ball fields would be provided, and there would be no sound amplification systems constructed within the park. In short, the park would not be designed or intended to host large groups of people and would be designed to only serve the neighboring community. All parks in the City are open from 6:00 a.m. to 10:00 p.m. (City of Sierra Madre 2020). Therefore, the proposed neighborhood public park would operate only between these hours. Additionally, the proposed project would not include any stationary mechanical equipment (such as pumps, motors, fans) associated with the proposed stormwater retention facilities that could generate noise levels with the potential to impact noise-sensitive receptors.

Per Section 9.32.050 of the Sierra Madre Municipal Code, sound-amplifying equipment and special events noise is prohibited from exceeding 60 dBA at a distance of 50 feet from the source without an exemption issued by the City Manager. Should such an exemption be issued by the City Manager, the precise nature of such an event or the noise level produced by sound-amplifying equipment is not known or foreseen at this time, and thus an assessment of impact would be speculative. Furthermore, noise from the proposed park would be subject to the Sierra Madre Municipal Code standards and enforcement. For these reasons, the proposed park would not result in a 6 dB increase above existing ambient noise levels, and potential impacts due to the operation of the proposed park would be **less than significant**.

In addition, as discussed above, the proposed neighborhood public park's hours of operations would be limited to 6:00 a.m. to 10:00 p.m.

[3] Unlike sound pressure, for which a distance dimension (i.e., feet or meters) is necessary for the level to have real meaning, sound power is the dimensionless energy rate, or sound energy per unit of time, emitted by a source.

[4] As for a 24VNA9 Infinity series air conditioner, manufactured by Carrier, or similar unit. Appendix G contains details for this product.

2. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Generally, construction activities can expose persons to excessive groundborne vibration or groundborne noise, which can cause a potentially significant impact. Caltrans has collected groundborne vibration information related to construction activities (Caltrans 2020). Information from Caltrans indicates that continuous vibrations with a PPV of approximately 0.2 ips are considered "annoying." For context, heavier pieces of construction equipment, such as a bulldozer that may be expected on the project site, have peak particle velocities of approximately 0.089 ips or less at a reference distance of 25 feet (FTA 2018). A vibratory roller, anticipated for the surface improvements phase of construction, exhibits 0.21 ips at 25 feet per the same FTA guidance.

Groundborne vibration attenuates rapidly—even over short distances. In addition, when groundborne vibration encounters a building foundation, a coupling loss occurs depending on its mass and design. For typical single-wood-frame houses, like those in the neighborhood near the project site, this coupling loss is usually approximately 5 vibration velocity decibels (VdB) according to FTA guidance (FTA 2018). Unlike peak particle velocity, vibration velocity decibels are an expression of the root mean square vibration velocity magnitude with respect to a reference value. The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. By way of example, and without consideration of potential foundation coupling loss, for a bulldozer operating on site and as close as the eastern project boundary (i.e., 25 feet from the nearest receiving sensitive land use) the estimated vibration velocity level would be approximately 0.089 ips and thus less than the annoyance threshold recommended by Caltrans. Foundation coupling loss would only reduce this vibration velocity amplitude.

Since the vibratory roller associated with paving activities is expected to be the greatest source of vibration, its anticipated PPV at a distance of 25 feet would just barely exceed the Caltrans annoyance standard of 0.2 ips; however, foundation coupling loss of 5 VdB at the receiving structure would reduce the apparent PPV to a level of less than 0.12 ips, and thus below this annoyance standard.

Construction vibration, at sufficiently high levels, can also present a building damage risk. However, anticipated construction vibration associated with this project would not yield levels that surpass this risk. Per Caltrans, the recommended PPV threshold for newer residential structures is 0.4 to 0.5 ips and 0.2 to 0.3 ips for older residential structures, both of which are less stringent that the aforementioned threshold to annoy occupants of such structures. Therefore, significant impacts due to generation of excessive groundborne vibration or groundborne noise levels, such as annoyance or risk to nearby structures, from construction activities would be **less than significant**.

3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The project is not located within the vicinity of a private airstrip nor is the project located within an airport land use plan. The closest public airport to the project site is the San Gabriel Valley Airport, located approximately 6.1 miles to the south. The project would therefore not expose people residing or working in the project area to excessive noise levels, and there would be **no impact**.

4.13.6 Mitigation Measures

The following mitigation measure shall be implemented to reduce potentially significant temporary noise impact during construction activities when construction takes place near the project boundaries (**Impact NOI-1**) to a level of less than significant.

MM-NOI-1 The City of Sierra Madre (City) and/or its Construction Contractor shall implement the following noise reduction measures during all construction activities:

- A temporary noise barrier shall be constructed along the project site's southern, and western boundaries. The construction noise barrier shall be a minimum of 8 feet in height. The barrier may be constructed of 3/4-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility having a surface weight of 2 pounds per square foot or greater. Alternatively, prefabricated acoustic barriers are available from various vendors. When barrier units are joined together, the mating surfaces of the barrier sides should be flush or overlap with one another. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, should be closed with material that will completely fill the gaps, and be dense enough to attenuate noise.
- Construction noise reduction methods such as shutting off idling equipment; installing temporary acoustic barriers around stationary construction noise sources; and, where feasible, use of electric air compressors and similar power tools, rather than diesel equipment, shall be employed.
- Equip all construction equipment (fixed or mobile) with properly operating and maintained mufflers, consistent with or exceeding manufacturers' standards.
- Ensure that construction equipment engine enclosures and covers as provided by manufacturers shall be in place during operation.
- Place all stationary construction equipment so that the equipment is as far as feasible from noise-sensitive receptors and so that the emitted noise is directed away from the noise-sensitive receptors.
- Locate equipment and materials staging in areas that will create the greatest distance between staging area noise sources and noise-sensitive receptors during project construction.
- Ensure that construction equipment is shut down when not in use.
- Limit haul truck deliveries to the same hours specified for the operation of construction equipment.

The following mitigation measure shall be implemented to reduce potentially significant operational noise impacts from HVAC noise, depending on the noise emission level of the selected residential HVAC systems (**Impact NOI-2**), to a level of less than significant.

MM-NOI-2 To ensure that the project's HVAC systems do not result in an exceedance of applicable noise standards (i.e., an increase of more than 6 dBA in the City of Sierra Madre, the HVAC system for each residence shall have a maximum noise level specification not to exceed 72 dBA sound power level (equivalent to a sound pressure level of 47 dBA at a measured distance of 25 feet [7.6 meters]) over a reflecting plane.

4.13.7 Level of Significance After Mitigation

Construction Noise

The project would result in excessive noise levels during construction activities, exceeding the applicable thresholds (80 dBA at 25 feet or 85 dBA L_{eq} at or beyond a noise-sensitive receiver's property boundary) (**Impact NOI-1**). However, through implementation of **MM-NOI-1** requiring the use of administrative controls, engineering controls, and noise barriers, construction noise levels would be within the City's noise limits. The temporary construction noise barrier alone would provide a noise reduction of approximately 9 dB or more along the southern and western boundaries, and at least 5 dB or more along the northern boundary. As shown in Table 4.13-4, along the southern and western boundaries the threshold was exceeded by 3 dB or less, and along the northern boundary the threshold would not be exceeded. Therefore, the temporary construction noise barriers would result in mitigated noise levels below the applicable construction noise thresholds. Implementation of the other measures would cumulatively provide further reductions. Because the proposed noise mitigation would ensure compliance with the applicable noise limits, construction noise impacts would be mitigated to **less than significant**.

Operational Noise

Operation of HVAC systems at the proposed residences was found to have the potential to exceed City of Sierra Madre noise thresholds, depending upon the noise level specification of the HVAC systems selected and installed by the project constructor (**Impact NOI-2**). However, implementation of **MM-NOI-2** would ensure that the HVAC systems would be of sufficiently low sound levels as to be in compliance with the noise threshold of the Cities of Sierra Madre. Therefore, operational noise from the proposed projects' HVAC systems would be me mitigated to **less than significant**.

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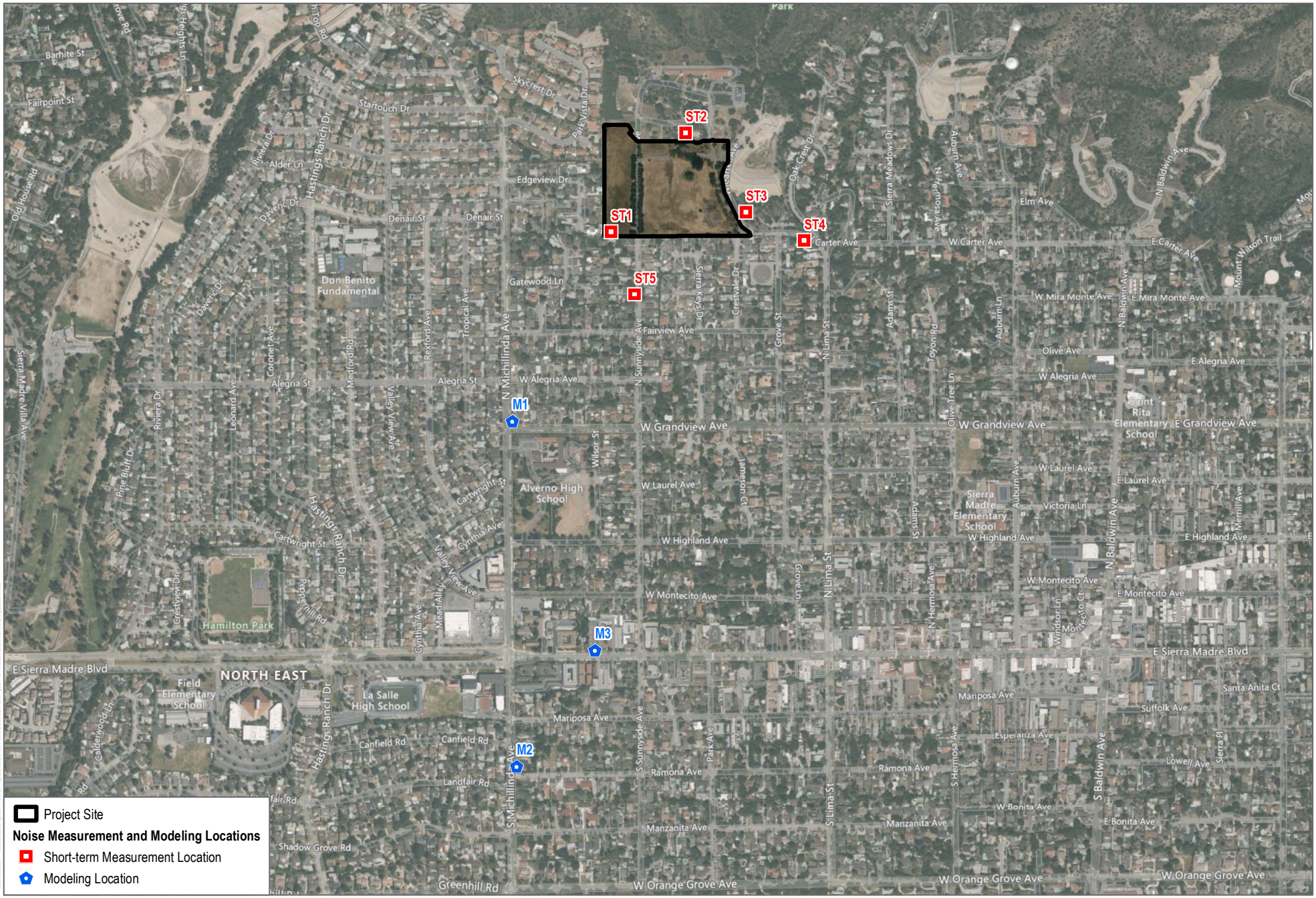

SOURCE: County of Los Angeles 2020; Bing Maps

DUDEK

0 500 1,000 Feet

FIGURE 4.13-1

Noise Measurement and Modeling Locations

The Meadows at Bailey Canyon EIR

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4.14 Population and Housing

This section describes the existing population and housing conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.14.1 Existing Conditions

This section describes the existing conditions on the project site, presents existing U.S. Census population data for the City of Sierra Madre (City) and also identifies population, housing, and employment projections for the City, the County of Los Angeles (County), and the Southern California Association of Governments (SCAG) region.

Project Site

The approximately 17.30-acre project site is currently undeveloped, aside from various access roads. Therefore, the project site does not currently support a residential population. Similarly, existing conditions on site do not consist of job-generating land uses to support an employment population.

U.S. Census

The U.S. Census is taken and published every 10 years and includes population and housing data for the entire United States. Census data is the baseline from which most demographic projections are calculated. The 2010 U.S. Census identified the population of the City was approximately 10,917 people. The Census estimates population change within the 10-year period as well. In July 2019, the estimated population for the City was 10,793, which represents a 1.1% decrease from the 2010 U.S. Census (U.S. Census Bureau 2020).

Population, Housing, and Employment Projections

SCAG is a federally designed Metropolitan Planning Organization for six counties in Southern California: Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles. SCAG develops long-range regional transportation plans, including a sustainable communities strategy and growth forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the South Coast Air Quality Management District's plans.

SCAG's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) develops a regional growth forecast, which reflects recent and past trends; key demographic and economic assumptions; and local, regional, and state policies. Additionally, SCAG prepared Demographics and Growth Forecast for all jurisdictions within the SCAG region comparing cities, counties, and the region on recent past and projected population, household, and employment changes. SCAG's 2020-2045 RTP/SCS was adopted on September 3, 2020 (SCAG 2021).

The City's population, household, and employment growth forecast between 2016 and 2045 is detailed in Table 4.14-1. In addition, Los Angeles County's and the SCAG region's population, household, and employment growth forecast between 2016 and 2045 are detailed in Table 4.14-2 and Table 4.14-3, respectively.

Table 4.14-1. City of Sierra Madre Growth Forecast

	2016	2045	Change 2016–2045	Change 2016-2045	No. of Years	Percentage of Change/Year
Population	11,000	11,300	300	2.7%	29	0.09%
Households	4,800	5,000	200	4.0%	29	0.14%
Employment	2,200	2,400	200	8.3%	29	0.29%

Source: SCAG 2020a

Table 4.14-2. Los Angeles County Growth Forecast

	2016	2045	Change 2016–2045	Change 2016–2045	No. of Years	Percentage of Change/Year
Population	10,110,000	11,674,000	1,564,000	13.4%	29	0.46%
Households	3,319,000	4,119,000	800,000	19.4%	29	0.67%
Employment	4,743,000	5,382,000	639,000	11.9%	29	0.41%

Source: SCAG 2020a

Table 4.14-3. SCAG Region Growth Forecast

	2016	2045	Change 2016–2045	Change 2016–2045	No. of Years	Percentage of Change/Year
Population	18,832,000	22,504,000	3,672,000	16.3%	29	0.56%
Households	6,012,000	7,633,000	1,621,000	21.2%	29	0.73%
Employment	8,389,000	10,049,000	1,660,000	16.5%	29	0.57%

Source: SCAG 2020a

Population

As shown in Tables 4.14-1 through 4.14-3, according to the growth forecast by SCAG, the City's population is anticipated to grow by 3% (approximately 0.1% per year) between 2016 and 2045. Comparatively, Los Angeles County is expected to experience a higher increase of approximately 13% (approximately 0.5% per year) between 2016 and 2045. Finally, Table 4.14-3 demonstrates the SCAG region as a whole is anticipated to grow by 16% (approximately 0.6% per year) between 2016 and 2045 (SCAG 2020a).

Housing

Tables 4.14-1 through 4.14-3, according to the growth forecast by SCAG, the number of households within the City is anticipated to grow by 4% (approximately 0.1% per year) between 2016 and 2045. Comparatively, Los Angeles County is expected to experience a higher increase of approximately 19% (approximately 0.7% per year) between 2016 and 2045. Finally, Table 4.14-3 demonstrates the SCAG region's housing supply as a whole is anticipated to grow by 21% (approximately 0.7% per year) between 2016 and 2045 (SCAG 2020a).

Employment

As shown in Tables 4.14-1 through 4.14-3, according to the growth forecast by SCAG, the City's workforce is anticipated to grow by 8% (approximately 0.3% per year) between 2016 and 2045. Comparatively, Los Angeles County is expected to experience a higher increase of approximately 12% (approximately 0.4% per year) between 2016 and 2045. Finally, Table 4.14-3 demonstrates the SCAG region as a whole is anticipated to grow by 17% (approximately 0.6% per year) between 2016 and 2045 (SCAG 2020a).

Jobs-to-Housing Ratio

The "jobs-to-housing ratio" represents the extent to which job opportunities in a given geographic area are sufficient to meet the employment needs of area residents. An area with a jobs-to-housing ratio that is lower than the regional ratio would be considered a "jobs poor" area, indicating that many of the residents must commute to places of employment outside of the area. Table 4.14-4 shows the projected jobs-to-housing ratios for the City, Los Angeles County, the SCAG region, based on SCAG's 2020–2045 RTP/SCS.

Table 4.14-4. Projected Future Jobs-to-Housing Ratios

	Employment in 2045	Number of Housing Units in 2045	2045 Jobs-to-Housing Ratio
City of Sierra Madre	2,400	5,000	0.48
Los Angeles County	5,382,000	4,119,000	1.31
SCAG Region	10,049,000	7,633,000	1.32

Source: SCAG 2020a

As shown on Table 4.14-4, the City's 2045 jobs-to-housing ratio was lower than those of the County and the SCAG region. The projected jobs-to-housing ratios for the City, County, and SCAG region in 2045 are 0.48, 1.31, and 1.32, respectively (SCAG 2020a). By these estimates, the City is considered a jobs-poor area under the SCAG projections, meaning that there are less jobs than residential households, which require residents to commute outside the City for employment.

4.14.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to population and housing relevant to the proposed project.

State

Regional Housing Needs Assessment

The Regional Housing Needs Assessment (RHNA) is mandated by the State Housing Law as part of a periodic process of updating local housing elements in city and county general plans. RHNA is produced by SCAG and contains a forecast of housing needs within each jurisdiction in the SCAG region for 8-year periods. The 5th Cycle RHNA Allocation Plan, covers the planning period between October 2013 through October 2021. The 6th Cycle RHNA has been approved on March 22, 2021. The 6th Cycle identified a need for 1,341,827 additional housing units within the SCAG region. Of the SCAG regional allocation, the total assigned to the City was 204 units, and the total assigned to the County is 90,052 units (SCAG 2021). Based on a methodology that weighs a number of factors (e.g., projected population growth, employment, commute patterns, and available sites), SCAG determines

quantifiable needs for dwelling units in the region according to various income categories. Once the RHNA allocation is established, local jurisdictions decide how to address their housing needs through the process of updating general plan housing elements. The City's latest housing element was produced in 2014 for the years 2014 through 2021. The proposed project would fall into the 6th Cycle of the RHNA and would therefore contribute to the City's efforts toward meeting its allocation.

Regional

Regional Transportation Plan/Sustainable Communities Strategy

As mentioned previously, SCAG develops long-range regional transportation plans, including an RTP/SCS that sets broad goals for the region and provides strategies to reduce problems associated with congestion and mobility. In recognition of the close relationship between traffic and air quality issues, the assumptions, goals, and programs contained in the RTP parallel those used to prepare the Air Quality Management Plan (AQMP) for the South Coast Air Quality Management District. As part of its RTP/SCS document, SCAG develops population and housing forecasts for the SCAG region and for the jurisdictions that make up the SCAG region (SCAG 2020a). Population and housing forecasts for the City, the County, and the SCAG region are from SCAG's most recent 2020–2045 RTP/SCS, shown in Tables 4.14-1 through 4.14-3.

Local

General Plan

The Housing Element of the City's General Plan is one of the required General Plan elements mandated by state law. State law requires that each jurisdiction's Housing Element adequately plans to meet the existing and projected housing needs; provide goals, policies, and quantified objectives to meet such needs; and schedule actions for the preservation, improvement, and development of housing. Please refer to Section 4.11.4 for a consistency with these policies.

The most recent Housing Element was adopted by the City on January 28, 2014, and projects housing production goals for through 2021 (City of Sierra Madre 2014). The following goals and policies from the Housing Element may be applicable to the proposed project. The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Goal 1.0: Maintain and enhance the quality of existing housing and ensure that new residential development is consistent with Sierra Madre's small town character.

Policy 1.1: Maintain sustainable neighborhoods with quality housing, infrastructure and open space that fosters neighborhood character and the health of residents.

Goal 2.0: Facilitate the provision of a range of housing types to meet community needs.

Policy 2.1: Encourage diversity in the type, size, price and tenure of residential development in Sierra Madre, while maintaining quality of life goals.

Policy 2.2: Provide adequate housing sites through appropriate zoning and land use designations, consistent with Sierra Madre's regional housing growth needs.

4.14.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to population and housing are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to population and housing would occur if the project would:

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).
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.14.4 Project Design Features

There are no project design features that apply to population and housing.

4.14.5 Impacts Analysis

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)?

Adoption of The Meadows at Bailey Canyon Specific Plan (Specific Plan) would establish the zoning and development standards to guide future development on-site. Future development under the proposed project would include 42 detached single-family residential units and 3.39 acres of open space (including a 3.04-acre neighborhood public park) on an 17.30-acre project site. The proposed project would result in new land use design and regulatory standards for the project site through the approval of the Specific Plan, a General Plan amendment, and Zoning Code change. The project would introduce new residential units to the City, which would contribute to but not exceed the number of housing units projected for the City, as discussed in Section 4.14.1, Existing Conditions.

Construction

Construction activities at the project site that would result under adoption of the Specific Plan would lead to the temporary need for construction workers, which may come from the City, other areas of Los Angeles County, or elsewhere within the SCAG region. The proposed project involves fairly common construction requirements that would not require a highly specialized labor force to permanently relocate from other regions. Construction of the project is anticipated to begin in February 2024 and would end in May 2025, for construction activities spanning over approximately 16 months. The different construction activities require specific skill sets for a much shorter duration than the overall construction schedule. Because construction workers would not be needed continuously and only for varying portions of the project phases, it is reasonable to assume that workers/crews would work at the project site on a temporary basis only, and thus, are not likely to relocate their households as a consequence of the construction job opportunities presented by the project. Because the demand for construction workers would be short-term, and because the project site within an urban metropolitan region with a high diversity of skilled labor, a permanent need for new workers to relocate in order to accommodate the proposed project's temporary construction workforce is not anticipated. Therefore, potential project-related population growth during construction activities is considered **less than significant**.

Operation

As discussed previously, adoption of the Specific Plan would result in development of 42 detached single-family residential units and a 3.04-acre park on a 17.30-acre lot. Therefore, implementation of the project would result in a new residential population onto the project site and immediate vicinity.

According to SCAG's Connect SoCal Program EIR, the average household size in the SCAG region was 3.2 persons per household in 2018 (SCAG 2019). Using the 2018 regional average as a guide, 3.2 persons per household for the project's proposed 42 residential units could generate a population increase of approximately 134 persons.

Population

SCAG estimates that Los Angeles County would have a population of 11,647,000 residents by 2045 (see Table 4.14-2) and the City would have an estimated 11,300 residents by 2045 (see Table 4.14-1). The forecasted population growth for the City is estimated to increase by 300 people (see Table 4.14-1) and by 1,564,000 people for Los Angeles County between 2016 and 2045 (SCAG 2020a).

Upon development of the site, it is possible that existing City residents could move into the proposed residential units. However, for the purposes of a conservative population growth analysis, it is assumed that all 134 potential residents would move to the proposed units from a location outside the City. As described above, SCAG has projected that the City will undergo an increase of 300 people from 2016 to 2045. The population growth anticipated to occur as a result of the project (134 residents) represents 45% of the City's projected population growth for 2016 to 2045, and 0.008% of the County's projected population growth in the same time period. Therefore, the project is projected to be within the anticipated population growth for the City and would not exceed the population growth projections for the surrounding County.

Other indirect factors are also taken into consideration in regards to a project's ability to substantially increase population growth. For instance, the removal of impediments to growth (e.g., constructing utility infrastructure and service systems in a previously undeveloped region) can induce growth. The project site is located in a residential area on the northwestern edge of the city limits and adjacent to similar residential land uses in nearby Pasadena. The surrounding area is developed and supported by existing road and utility infrastructure. The project would include connections to existing utilities and infrastructure and would not result in the extension of infrastructure or roads into an undeveloped area leading to substantial population growth. Therefore, the project would not have the potential to induce growth via infrastructure development or expansion of roads or utility infrastructure.

Housing

Housing projections for the City, as projected by SCAG and shown in Table 4.14-1, indicate the number of households in the City is anticipated to increase from 4,800 households in 2016 to 5,000 households in 2045, an increase of 200 households. Based on the SCAG's growth projections for housing for the City, the project's 42 dwelling units would represent 21% of the 200 households projected to be added to the City between 2016 and 2045.

However, the project would contribute to state-mandated RHNA housing goals and would be consistent with regional efforts to boost housing growth and meet regional housing needs. In its 6th RHNA Cycle, SCAG identifies the City's share of housing needs is 204 new units (SCAG 2012). In response to the RHNA allocation, cities must update the Housing Element of the General Plan to address how to meet the regional housing needs. Cities must prepare an annual progress report on the jurisdiction's status and progress in implementing its housing element, and thus, meeting its RHNA allocation. According to the 5th Cycle annual progress report permit summary maintained by the California Department

of Housing and Community Development, as of October 2020, the City has issued 68 permits for housing developments, which is above its 55-unit RHNA allocation (HCD 2020). As such, the City has met its RHNA allocation for the 5th Cycle RHNA Allocation Plan. However, as previously indicated, SCAG recently adopted its 6th Cycle RHNA allocation plan, which would be in effect from 2021 through 2029. As discussed in Chapter 3, Project Description, of this Draft Environmental Impact Report (EIR), the project's anticipated construction schedule is anticipated to conclude in May 2025. Therefore, the project would be accounted for in the City's 6th Cycle RHNA allocation.

Employment

As indicated by SCAG and shown in Table 4.14-1, the projected number of jobs in the City is anticipated to increase from 2,200 in 2016 to 2,400 in 2045, for an increase of 200 jobs. The project does not include employment-generating land uses. Thus, the project would not exceed the projected employment growth anticipated for the City and would not result in unplanned population growth as a result of increased employment opportunities.

Jobs-to-Housing Ratio

As discussed in Section 4.14.1, Existing Conditions, the City is considered a jobs-poor community and projected to continue to be jobs-poor in 2045, according to SCAG estimates shown in Table 4.14-4. Development under the adopted Specific Plan would add 42 residential units to the City and not include employment-generating land uses to the project site. Since the project would add more housing units than jobs to the project site, the project would contribute to the jobs-poor area compared to the regional jobs-to-housing ratio. However, as discussed above, the project would be consistent with SCAG's growth projections of population and housing as well as RHNA allocations. Lastly, one of the objectives of the project is to provide above-moderate income housing, in accordance with the City's 6th Cycle RHNA (see Section 3.2). Thus, the project would not result in a substantial unplanned population growth. The population growth anticipated to occur as a result of the project (134 residents) represents 45% of the City's projected population growth for 2016 to 2045, and 0.008% of the County's projected population growth in the same time period. Although under existing conditions, the City is a jobs-poor community, the City is within a jobs-rich Los Angeles County and adjacent to Pasadena as a designated "job center", which represents an area with local employment peaks (SCAG 2020c). As such, the project would not result in unplanned growth as a result of an increase in housing.

Summary

Once operational, the proposed 42-unit residential project would generate approximately 134 new residents to the City. The project would not exceed the projected growth for the City or the County between 2016 and 2045. The population growth anticipated to occur as a result of the project (134 residents) represents 45% of the City's projected population growth for 2016 to 2045, and 0.008% of the County's projected population growth in the same time period. In addition, the project's 42 residential units would contribute to the City's Housing Element objectives and policies and the State-mandated RHNA housing goals.

As further discussed in Chapter 6, Growth Inducement, of this EIR, the project site is in an urbanized area and is surrounded by residential land uses. Given the developed nature of the surrounding area the proposed internal roadway network, utility connections, and utility infrastructure would not induce population growth by removal of impediments to growth (e.g., constructing utility infrastructure and service systems in a previously undeveloped region). Further, the project's infrastructure plan would support the development of the project and would not accommodate the growth beyond what is proposed. Therefore, given the urbanized nature of the City, the project would not stimulate substantial unplanned population growth and impacts related to population growth would be **less than significant**.

2. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Under existing conditions, the project site consists of 17.30 acres of undeveloped land, aside from three access roads which cross the project site. None of the existing land uses includes housing, and thus, the project site does not currently support a residential population. Similarly, the project site does not consist of employment-generating land uses to support an existing employment population. Therefore, the project would not displace substantial numbers of existing people or housing and **no impact** would occur.

4.14.6 Mitigation Measures

The project would not result in significant impacts; therefore, no mitigation is required.

4.14.7 Level of Significance After Mitigation

All impacts were determined to be less than significant. No mitigation is required.

4.15 Public Services

This section describes the existing public services conditions of The Meadows Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.15.1 Existing Conditions

Project Site

The project site is located in the northwestern portion of the City of Sierra Madre (City). The existing fire stations, police stations, parks, schools, and libraries present in the surrounding of the project site are discussed herein and shown in Figure 4.15-1, Facility Locations.

Fire Protection Services

The City of Sierra Madre Fire Department (SMFD) provides fire protection services for the City, including the project site. SMFD is responsible for emergency medical calls, fire response, and inspection and plan check services. Fire protection services provided to the City include fire, emergency medical, search and rescue, hazardous materials prevention and response, and other emergency response resources. SMFD is a single station department located at 242 West Sierra Madre Boulevard, approximately 0.7 miles southeast of the project site.

According to the SMFD, the current staffing level at the City's station is at 10 sworn personnel. In response to a request for information, the SMFD noted a fully staffed station would be at 15 sworn personnel with a goal to increase staffing to 21 sworn personnel. The increase in personnel would allow for one additional firefighter on the engine as well as one Battalion Chief, which is currently contracted out by another agency. Current plans to expand equipment at the station are the purchase of a new rescue ambulance and a new fire engine, both of which would replace existing vehicles (City of Sierra Madre 2020a). According to the SMFD, the City includes the following apparatus at the station:

- Two Type I Fire Engines
- One Type I Rescue Ambulance
- One Type III Rescue Ambulance
- One Type Water Tender
- One Utility Vehicle
- One Command Vehicle

SMFD does not have any signed mutual aid agreements for fire protection. However, the City has automatic aid agreements with the Angeles National Forest and the County of Los Angeles (City of Sierra Madre 2021).

Police Protection Services

The Sierra Madre Police Department (SMPD) provides police protection services to the City. The SMPD station is located at 242 West Sierra Madre Boulevard, approximately 0.7 miles southeast of the project site. The SMPD station performs various law enforcement, code enforcement, traffic enforcement, investigative functions, and

various administrative duties. SMPD also participates in a mutual-aid agreement with the local surrounding cities of Pasadena, Arcadia, and Monrovia (City of Sierra Madre 2015a, 2020b).

According to the SMPD, current staffing levels include 16 full-time police officers, 1 civilian supervisor, 4 dispatchers, and 2 part-time civilians (City of Sierra Madre 2020b). According to City's General Plan Environmental Impact Report (EIR), the City does not utilize an officer-to-resident population ratio to assess acceptable performance standards (City of Sierra Madre 2015a).

Response times, according to call load statistical data from the General Plan EIR, average at approximately 3 minutes and 31 seconds for Priority One Calls with the highest priority needs, 4 minutes and 13 seconds for Priority Two Calls with miscellaneous calls for service, and 4 minutes and 48 seconds for Priority Three Calls typically used for reporting (City of Sierra Madre 2015a).

Schools

The project site is served by the Pasadena Unified School District (PUSD). Schools within the project area include Sierra Madre Elementary School, Sierra Madre Middle School, and Pasadena High School. Sierra Madre Elementary School serves grades K–5, is located at 141 West Highland Avenue in Sierra Madre, and is located approximately 0.48 miles southeast of the project site. Sierra Madre Middle School serves grades 6–8, is located at 160 North Canon in Sierra Madre, and is located approximately 1.08 miles southeast of the project site. Pasadena High School is located at 2925 East Sierra Madre Boulevard in Pasadena and is located approximately 1.47 miles southwest of the project site (City of Sierra Madre 2015a). Table 4.15-1 details the enrollment and capacity of each campus.

Table 4.15-1. Enrollment and Capacity for 2012–2013

School	Current Enrollment	Current Capacity	Remaining Capacity
Sierra Madre Elementary School	744	800	56
Sierra Madre Middle School	410	410 (650[a])	0 (240[a])
Pasadena High School	1,897	2,800	903
Total	**3,051**	**4,010 (4,250[a])**	**959 (1,199[a])**

Source: City of Sierra Madre 2015a.

[a] Sierra Madre Middle School was under construction at the time of the City's General Plan EIR was prepared (City of Sierra Madre 2015a). The campus is currently operational at the time of this EIR (PUSD 2020).

PUSD assumes a student generation rate of 0.13, 0.07, and 0.09 for grades K-5, 6-8, and 9-12, respectively, to estimate the number of students generated by new development projects in order to determine adequate need for facilities (City of Sierra Madre 2015a). Furthermore, in November 2008, voters passed a $350 million bond initiative (Measure TT) for PUSD to repair and upgrade existing campuses. In addition, it is anticipated that funding from the bond would support expansion of Sierra Madre School to support Elementary and Middle School campuses as well as renovations to Pasadena High School (City of Sierra Madre 2015a).

Parks

The City maintains six parks within the municipal boundaries. Bailey Canyon Wilderness Park, located at 451 Carter Avenue, is approximately 15 acres and is the closest park to the project site. Bailey Canyon Wilderness

Park offers picnic areas, drinking fountain, hiking trails, trail marker signage, native botanical area, fire ring, interpretive display, handicap accessibility, outdoor restrooms, and a kiosk (City of Sierra Madre 2015b).

Section 16.44.030 (General Standard) of the City's Municipal Code identifies a standard of 3 acres of park and recreation facilities per 1,000 residents (City of Sierra Madre 2020b). According to the City's General Plan EIR, the City maintains 23 acres of parkland. As a result, the existing park to population ratio in the City, based on the City's population of 11,030, is 2.09 acres of parkland per 1,000 residents (City of Sierra Madre 2015b). Thus, the park to population ratio is under the City's minimum standard under existing conditions. The City's General Plan EIR states a need for approximately 10 acres of parkland to reach the desired parkland per resident ratio in the City (City of Sierra Madre 2015b).

Libraries

The Sierra Madre Public Library is located at 440 West Sierra Madre Boulevard, approximately 0.65 miles south of the project site. Library services provide a collection of books, reference materials, and media resources in addition to online databases, social programs, workshops, and study spaces (City of Sierra Madre 2015a).

There are no prescriptive standards set for public libraries. According to the City's General Plan EIR, outcome-based assessment processes are used to serve different communities with varying needs. In order to allow for a potential expansion of the existing library building in the future, the property at 449 Mariposas Avenue was rezoned in 2013 to permit library facilities, and the Children's Room of the Sierra Madre Public Library was completed in 2012 to improve the use of the existing space. Furthermore, the Sierra Madre's Public Library's Board of Trustees follow the City's strategic planning process to assess the needs of the library for new services and facilities (City of Sierra Madre 2015a).

Sierra Madre Public Library includes four full-time staff and ten part-time employees, weekly from Monday through Saturday (City of Sierra Madre 2015c). Funding for the City's library facilities are provided by the City's General Fund and grants which vary year to year as well as through the collection of Public Facilities Fees, in accordance with Chapter 15.52 (Public Facilities Fee) of the Sierra Madre Municipal Code.

4.15.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, and ordinances related to public services relevant to the proposed project.

State

California Fire Code

The California Fire Code is Chapter 9 of Title 24 of the California Code of Regulations. The California Fire Code provides regulations for safeguarding life and property from fire and explosion hazards derived from the storage, handling, and use of hazardous substances, materials, and devices. The provisions of this code apply to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenance connected or attached to such building structures throughout the state.

California Health and Safety Code

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, including regulations for building standards (also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed.

California Education Code

PUSD's facilities and services are subject to the rules and regulations of the California Education Code and governance of the State Board of Education. Traditionally, the state has passed legislation for the funding of local and public schools, and provided the majority of monies to fund education in the state. To assist in providing facilities to serve students generated from new development projects, the state passed Assembly Bill 2926 in 1986, allowing school districts to collect impact fees from developers of new residential, commercial, and industrial developments. Section 65996 of the California Government Code designates Section 17620 of the Education Code (the mitigation fees authorized by Senate Bill 50) and Section 65970 of the California Government Code to be the exclusive method for considering and mitigating development impacts on school facilities. Section 65996 legislates that development impact fees collected under Section 17620 of the Education Code (the mitigation fees authorized by Senate Bill 50) and Section 65970 of the California Government Code be deemed, "to provide full and complete school facilities mitigation." Under California Government Code Section 65996, a state or local agency may not deny or refuse to approve the development of real property on the basis that school facilities are inadequate.

Under Senate Bill 50, there are three levels of developer fees that may be imposed upon new development by the governing school district. PUSD, which serves the City, collects Level I Fees, which are currently $2.24 per residential square foot (City of Sierra Madre 2015a). Per Section 6.32.070 of the Sierra Madre Municipal Code (SMMC), fees collected by PUSD may vary, as deemed necessary by the City (see discussion of the SMMC, below).

Quimby Act

California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require developers to dedicate land and/or pay in-lieu fees toward the conservation of parkland. The Quimby Act was legislated to encourage the pre-emptive mitigation of developments' impact to parks and open space with the overarching goal of achieving a jurisdictional standard of 3.5 acres of parkland per 1,000 residents. The land dedication and/or fees differ by project and are based upon the residential density, parkland cost, and other factors. Land dedication and fees collected pursuant to the Quimby Act may be used for acquisition, improvement, and expansion of park, playground, and recreational facilities or the development of public school grounds.

Local

City of Sierra Madre General Plan

Chapter Three, Hazard Prevention, of the City's General Plan discusses the existing conditions, facilities, and operations for City's fire protection services and the Sierra Madre Fire Department. In addition, this section within the General Plan identifies objectives and policies related to service levels, quality of fire protection for existing and future development, policies toward mutual aid, and disaster preparedness priorities to name a few (City of Sierra Madre 2015d).

Chapter Four, Community Services, of the City's General Plan outlines goals and policies for the City's law enforcement, recreation services, and library services. Similar to fire protection services, the City's General Plan outlines goals and policies related to existing law enforcement services with the SMPD. For example, the General Plan identifies objectives related to sufficiency in resources and disaster preparedness. In addition, the General Plan describes the existing conditions of parks, recreational facilities, service goals and objectives managed by City's Community Services Department. Objectives are also identified for library services to provide the City with facilities for community events and education (City of Sierra Madre 2015d).

General Plan objectives and policies relevant to the proposed project with regard to public services are below (City of Sierra Madre 2015d). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Chapter Three: Hazard Prevention

Policy Hz1.3: Continue to coordinate the provision of fire services with all public safety service providers and monitor their adequacy and responsiveness to community needs.

Objective Hz2: Providing adequate fire protection necessary for existing and future development.

Policy Hz2.2: Continue to require all new development to install automatic fire sprinkler systems.

Policy Hz2.3: Continue to require review of building plans by a Fire Captain/Fire Marshal.

Policy Hz.2.5: Assess the impacts of incremental increase in development density and related traffic congestion on fire hazards and emergency response times, and ensure through the development review process that new development will not result in a reduction of fire protection services below acceptable levels.

Chapter Four: Community Services

Policy C1.1: Provide professional police response and protection to the community by partnering with residents, business persons and visitors to the City.

Policy C1.2: Assess the impact of increases in population on response time, calls for service and traffic through the development review process so law enforcement assets will not be degraded.

Policy C3.1: Evaluate on a continual basis the delivery of police services to monitor their adequacy and responsiveness to community needs.

Policy C4.3: Maximize passive prevention measures for new and existing development through the development review process.

City of Sierra Madre Municipal Code

Fire Protection Services

Title 15 (Building and Construction), Chapter 15.24 (Fire Code)

Chapter 15.24 of the SMMC adopts the most current California Fire Code, which includes precautionary regulations and standards such as fire-retardant roofs, automatic life safety support sprinkler system, and fire extinguishers.

Title 15 (Building and Construction), Chapter 15.52 (Public Facilities Fee)

Chapter 15.52 of the SMMC imposes a fee as a condition of issuance of any project permit to mitigate potential impacts of new development on public facilities, including fire protection services.

Police Protection Services

Title 2 (Administration and Personnel) Chapter 2.60 (Reserve Police Force)

Chapter 2.60 of the SMMC organizes a reserve police force of a maximum of 25 volunteer members appointed by the Chief of Police to assist SMPD with enforcement of the law and maintenance of peace and order.

Title 15 (Building and Construction) Chapter 15.52 (Public Facilities Fee)

Chapter 15.52 of the SMMC imposes a fee as a condition of issuance of any project permit to mitigate potential impacts of new development on public facilities, including police protection services.

School Services

Title 16 (Subdivisions) Chapter 16.32 (Dedications, Improvements, and Requirements) Section 16.32.070 (School Sites)

Chapter 16.32 Section 16.32.070 of the SMMC requires any developer who develops or completes the development of a subdivision in the City to dedicate land, pay fees in lieu of, or an appropriate pro rata share to the school district as necessary for the purpose of constructing or expanding new school facilities to assure residents of the subdivision have adequate public school services.

Parks

Title 16 (Subdivision), Chapter 16.44 (Regulations for Dedication of Land for Park and Recreation Land)

The SMMC requires parkland dedication or in-lieu park fees for all new developments to ensure the City provides its residents with adequate parks and recreational activities. The dedication of parkland is based on a formula that takes into account the type of dwelling unit (e.g., single-family, duplex, cluster, apartments) and average density being proposed, as outlined in Section 16.44.040 (Formula for Dedication of Land). If no park or recreation facility is designated within the proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the developer is required to, in lieu of dedicating land, pay a fee equal to the

value of that land using a formula outlined in Section 16.44.050 (Formula for Fees In Lieu of Land Dedication). The revenue generated from this fee is required to be used only for the purpose of acquiring necessary parkland and developing new or rehabilitating existing parks or recreational facilities reasonably related to serving the subdivision development. Section 16.44.030 (General Standard) sets a general City-wide standard of three acres of parkland per 1,000 residents to ensure an adequate amount of neighborhood and community parks exist within the city to serve its residents. The standard is in accordance with the parkland requirements of the Quimby Act.

Other Public Services

Title 15 (Building and Construction) Chapter 15.52 (Public Facilities Fee)

Chapter 15.52 of the SMMC imposes a fee as a condition of issuance of any project permit to mitigate potential impacts of new developments on public facilities. The public facilities covered by this fee include general government, library, public safety, library, parks, traffic, water, and sewer (City of Sierra Madre 2020b).

4.15.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to public services are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to public services would occur if the project would:

1. 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 any of the public services:
    a. Fire protection.
    b. Police protection.
    c. Schools.
    d. Parks.
    e. Other public facilities.

4.15.4 Project Design Features

There are no project design features that apply to public services.

4.15.5 Impacts Analysis

1. ***Would the project 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, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:***

    a. Fire protection?

Construction

The proposed project would establish The Meadows Specific Plan (Specific Plan), which would establish the zoning and development standards to guide future development of the project site. Construction activities associated with the proposed project may temporarily increase demand for fire protection and emergency medical services. Construction activities may involve the operation of construction equipment and machinery, storage, handling, and disposal of combustible materials, and the use of flammable or toxic materials.

To comply with California Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) and Fire and Building Code requirements, construction managers and personnel would be trained in fire prevention and emergency response, and fire suppression equipment specific to construction would be maintained on site. Project construction would comply with all applicable codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. City and state regulations and code requirements would, in part, require personnel to be trained in fire prevention and emergency response, maintenance for fire suppression equipment, and implementation of proper procedures for storage and handling of flammable materials. Thus, compliance with regulatory requirements would reduce the potential for construction activities to expose people to the risk of fire explosion related to hazardous materials.

Project construction could also affect the provision of SMFD services in the project vicinity as a result of construction impacts to surrounding roadways. However, as described in Section 4.17, Transportation, of this EIR, all construction activities including staging would occur in accordance with City requirements (such as SMMC Chapter 17.30, which requires that streets be maintained free and clear during construction), which would ensure that adequate emergency access to the project site during construction of the project. Emergency procedures or design features required by City, State, or federal regulations would be implemented as appropriate during construction. Furthermore, Section 21806 of the California Vehicle Code allows drivers of emergency vehicles to have a variety of options for avoiding traffic, such as using sirens to clear a path of travel and driving in the lanes of opposing traffic. Based on these considerations, construction of the proposed project would not be considered a high-risk activity, and the SMFD is equipped and prepared to deal with construction-related traffic and fires, should they occur. Due to compliance with applicable codes and fire safety standards, project construction is not expected to adversely impact firefighting and emergency services to the extent that there would be a need for the addition of a new fire station or the expansion, consolidation, or relocation of an existing facility in order to maintain acceptable fire protection services, 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. Therefore, potential construction impacts would be **less than significant**.

Operation

SMFD currently serves the project site and the surrounding area. Each additional development that provides net new square footage creates a greater demand on existing resources. The increased use of the project site resulting from future development of the project site would be expected to increase the frequency of emergency response calls relative to existing conditions. However, for the reasons enumerated below, the proposed increase in development intensity at the project site would not be expected to result in the need for new or expanded fire protection facilities.

The need for new or expanded public services (such as fire protection facilities) is typically associated with a population increase. As described in Section 4.14, Population and Housing, of this EIR, new residential units would result in an increase of approximately 134 new residents on the project site. However, due to the minor nature of the population growth that could result from development allowed under the proposed project and because this growth falls well within the projected population growth for the City, the population growth that could be caused by the proposed project is not considered substantial and has been accounted for in local and regional population projections. Furthermore, the proposed project would be designed and constructed in accordance with all applicable provisions of the fire code, which includes requirements for adequate fire flows, width of emergency access routes, turning radii, automatic sprinkler systems, fire alarms, and floor to sky height limits along emergency access routes. In addition, a Fire Protection Plan (FPP) was prepared for the project in November 2020 (included as Appendix F2 of this EIR). The FPP evaluates and identifies the potential fire risk associated with the project's land uses and identifies requirements for water supply, fuel modification and defensible space, emergency access, building ignition and fire resistance, fire protection systems, and wildfire emergency pre-planning, among other pertinent fire protection criteria. The purpose of the FPP is to generate and memorialize the fire safety requirements of the City along with project-specific measures based on the site, its intended use, and its fire environment. Compliance with the fire code standards (including those listed in Section 4.15.2, Relevant Plans, Policies, and Ordinances) would be ensured through the plan check process and SMFD review prior to the issuance of building permits for the project. More specifically, the proposed project would be designed to include fire protection features, which would help prevent fire hazards. For example, the buildings placement on the site would limit the possibility of building-to-building fire spread to the extent practicable and structural framing elements and some non-structural elements would have specific fire resistance ratings as required by the California Building Code and Title 15 (Building and Construction), Chapter 15.24 (Fire Code) and the project would be designed with fire protection systems such as fire hydrants and automatic fire sprinkler systems, per these codes. These fire safety features and compliance with fire code standards would reduce the potential demand for fire services by decreasing the likelihood and/or severity of a fire emergency at the site.

The project site is currently served by one existing fire station, which is approximately 0.7 miles southeast of the project site. The SMFD station maintains a response time of 5.5 minutes. No expansion of these facilities is currently contemplated (City of Sierra Madre 2020a). As discussed in Section 4.15.1, the current staffing level at the City's station is at 10 sworn personnel. In response to a request for information, the SMFD noted a fully staffed station would be at 15 sworn personnel with a goal to increase staffing to 21 sworn personnel. The increase in personnel would allow for one additional firefighter on the engine as well as one Battalion Chief, which is currently contracted out by another agency. Therefore, in a request for information, the SMFD indicated that existing facilities are sufficient to accommodate the proposed (City of Sierra Madre 2020a). In the event that the City's fire station cannot meet the immediate needs of a call for services independently or does not have capability to address the full extent of a larger incident, existing mutual aid agreements would enable non-lead fire agencies to respond to fire emergencies outside their district boundaries. Payment of development fees by the project applicant, as required by Chapter 15.52 of the SMMC, would be used to offset the costs of increased

personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives.

SMFD has reviewed the project and has determined that it would not have a significant effect on service demands (City of Sierra Madre 2020a). Therefore, through payment of appropriate development fees by the project applicant, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities. Impacts would therefore be **less than significant**.

b. Police protection?

Construction

There is the potential for project construction associated with adoption of the Specific Plan to create an increase in demand for police protection services, as construction sites can be sources of attractive nuisances, can provide hazards, and can invite theft and vandalism when not properly secured. This could result in an increase in the demand for police protection services. Consequently, developers and construction contractors typically take precautions to prevent trespassing through construction sites. During construction, temporary security features including fencing would be implemented in compliance with the SMMC. These features would reduce the need for police protection services during the project's construction phase.

Project construction could also potentially impact the provision of police protection services in the project vicinity as a result of construction impacts to surrounding roadways. However, as described in Section 4.17, Transportation, of this EIR, all construction activities including staging would occur in accordance with City requirements (such as SMMC Chapter 17.30, which requires that streets be maintained free and clear during construction), which would ensure that adequate emergency access to the project site during construction of the project. Emergency procedures or design features required by City, State, or federal regulations would be implemented as appropriate during construction. Furthermore, Section 21806 of the California Vehicle Code allows drivers of emergency vehicles to have a variety of options for avoiding traffic, such as using sirens to clear a path of travel and driving in the lanes of opposing traffic. Based on these considerations, construction of the proposed project would not substantially affect police protection services and would not result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered government facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable police protection services. Therefore, potential construction impacts would be **less than significant**.

Operation

As with fire protection services, the increased use of the project site attributable to the proposed project would be expected to increase the frequency of emergency and non-emergency calls to the SMPD. The project site is currently undeveloped. Future development of the proposed project site associated with adoption of the Specific Plan is expected to increase demands relative to existing conditions. However, the proposed project would incorporate operational practices and design elements to increase safety and to reduce the potential for crime to occur, which could lessen the demand for police protection services at the project site. The project would be designed to minimize secluded areas and potential hiding places. Signage and lighting would be used to facilitate wayfinding and safe pedestrian movement throughout the site and within the proposed buildings. These design practices and operational practices would lessen the demand for police protection services at the project site by reducing the potential for crime to occur.

The SMPD employs a total of 16 full-time police officers, 1 civilian supervisor, 4 dispatchers, and 2 part-time civilians (City of Sierra Madre 2020c). According to the General Plan EIR, the City does not utilize an officer-to-resident population ratio to measure adequacy of service. However, in response to a public services information request, the SMPD stated the proposed development would affect response times and service ratios under existing staff and facility conditions. Under existing conditions, the average response time to the project site would be approximately 2 minutes and there are no existing plans to increase facilities or equipment (City of Sierra Madre 2020c). Payment of development fees by the project applicant, as required by Chapter 15.52 of the SMMC, would be used to offset the costs of increased personnel or equipment that could be required in order to maintain acceptable service ratios, response times, and other performance objectives. In addition, as discussed in Section 4.15.1, the SMPD participates in mutual-aid agreements with the local surrounding agencies of Pasadena, Arcadia, and Monrovia (City of Sierra Madre 2015a; 2020b). Finally, the proposed project is expected to increase the City's population by approximately 134 people. This represents a negligible effect on the existing officer-to-population ratio and indicates that the proposed project would have minimal effects on the service levels provided by the SMPD.

While new development places increased demand on police protection services, it is not anticipated that the proposed project would result in the need for construction or expansion of police facilities. In the event that additional personnel or assets are added to the City, these additional resources would improve public safety but would not likely require the construction or expansion of physical facilities with the potential to result in environmental effects. Furthermore, police units are continuously mobile, and service calls are responded to by the nearest available mobile unit. As such, the location of the proposed project relative to the City's police station would not affect police protection. For these reasons, while the proposed project could contribute to existing demands for police protection services, it would not require new or physically altered police protection facilities, the construction of which would cause environmental impacts. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities. Impacts would therefore be **less than significant**.

c. Schools?

The need for new school facilities is typically associated with a population increase that generates an increase in enrollment large enough to cause new schools to be constructed. Table 4.15-2 provides the number of students generated by the proposed project.

Table 4.15-2. Students Generated by Proposed Project Households

Grade Level	Student Generation Rate	Number of Households	Number of Students
K–5	0.13	42	5
6–8	0.07	42	1
9–12	0.09	42	4
		Total	**10**

Source: City of Sierra Madre 2015a.

As shown in Table 4.15-1, the schools serving the project site are projected to have a surplus capacity of approximately 1,199 seats in the future (56 seats for grades K–5, 240 seats for grades 6–8, and 903 seats for grades 9–12). The anticipated increase in 10 students would result in an increase in enrollment. However, this increase in enrollment is expected to be well accommodated through the schools' anticipated availability in capacity, especially considering that students would likely be spread across elementary, middle, and high school.

Additionally, per California Government Code Section 65995, developer fees paid to LAUSD would address any effects to schools. As such, impacts would be **less than significant**.

d. Parks?

The City maintains six parks across 23 acres (City of Sierra Madre 2015b). The City's General Plan identifies a standard of three acres of parkland per 1,000 residents (City of Sierra Madre 2020b). Based on the City's population of 11,030, the park to population ratio is 2.09 acres of parkland per 1,000 residents. Therefore, the City currently has a parkland deficiency regardless of the Project. The City's General Plan EIR states a need for approximately 10 acres of parkland to reach the desired parkland per resident ratio in the City (City of Sierra Madre 2015b).

Increased demand for neighborhood and regional parks or recreational facilities is most commonly associated with a substantial population increase such that existing parks and recreational amenities would be over-utilized and deteriorate as a result. As discussed in Section 4.14, Population and Housing, of this EIR, future development under the Specific Plan is anticipated to add approximately 134 new residents to the City. At least a portion of these new residents are anticipated to frequent the various public parks located in proximity to the project site, including Bailey Canyon Wilderness Park, located approximately 300 feet to the east of the site

In addition to the nearby parks, project residents would have access to a proposed on-site park that would be provided as part of the project. The proposed park would be 3.04 acres in size and located at the southernmost portion of the project site (see Figure 3-3, Proposed Park Conceptual Plan, in Chapter 3, Project Description, of this EIR). The proposed park would feature landscaped mounds, one pond, pedestrian paths, shared open turf/play areas, adventure/natural play equipment, native garden beds, picnic areas, benches, overlook areas, a restroom building, a water fountain, landscaping, water quality facilities, and a small parking lot. The park's location along the southern boundary of the site provides enhanced connectivity to the Bailey Canyon Wilderness Park to the east. The location also provides the closest access to existing residential uses. Thus, the project would provide opportunities for passive and limited active recreation on site. These on-site amenities would provide an alternative to off-site public parks and recreational facilities, allowing the project's residents to recreate on the project site while incrementally reducing potential impacts to off-site public parks.

Although the City is currently experiencing a deficit in the desired parkland ratio, the project would be subject to the State's Quimby Act, and the SMMC. More specifically, the Quimby Act allows the City to require development projects to set aside land, donate conservation easements, or pay in-lieu fees for park improvements. SMMC Title 16 (Subdivision), Chapter 16.44 (Regulations for Dedication of Land for Park and Recreation Land) requires parkland dedication or in-lieu park fees for all new developments. The dedication of parkland is based on a formula that takes into account the type of dwelling unit and average density being proposed, as outlined in SMMC Section 16.44.040 (Formula for Dedication of Land). Using Alternative 2 (Formula Based on Dwelling Units) to calculate the number of acres of parkland dedication required under the proposed project would compare the proposed 42 detached single-family units to the standard acres per dwelling unit of 3 acres per 250 dwelling units (City of Sierra Madre2020c). Thus, the proposed project would be required to provide 0.5 acres of parkland on-site. As mentioned above, the project would include 3.04 acres for a neighborhood public park. Therefore, the project applicant would provide substantially more than the required amount of parkland in compliance with the SMMC and help to reduce the overall Citywide parkland deficit.

Due to the inclusion of a dedicated neighborhood public park, the population growth that would occur as a result of the project is not anticipated to result in the overuse of existing parks such that the need for new or

physically altered parks would be necessary. Therefore, impacts associated with park facilities would be **less than significant.**

e. Other public facilities?

Other public facilities and services provided within the City include library services. Library services are provided at the Sierra Madre Public Library. The Sierra Madre Public Library is located at 440 West Sierra Madre Boulevard, approximately 0.65 miles south of the project site. As stated above, there are no prescriptive standards set for public libraries. According to the City's General Plan EIR, outcome-based assessment processes are used to serve different communities with varying needs. As such, due to the nominal increase in service population associated with future development of the site, the increase in residents would not substantially impact library facilities. Thus, it is anticipated that existing library services would accommodate any increase in demand due to implementation of the proposed project. In addition, payment of development fees by the project applicant would be used to offset the costs of increased personnel or equipment that could be required in order to maintain such services. Therefore, impacts to other public facilities in the area resulting from the proposed project would be **less than significant**.

4.15.6 Mitigation Measures

Impacts would be less than significant. No mitigation measures are required.

4.15.7 Level of Significance After Mitigation

Impacts would be **less than significant.**

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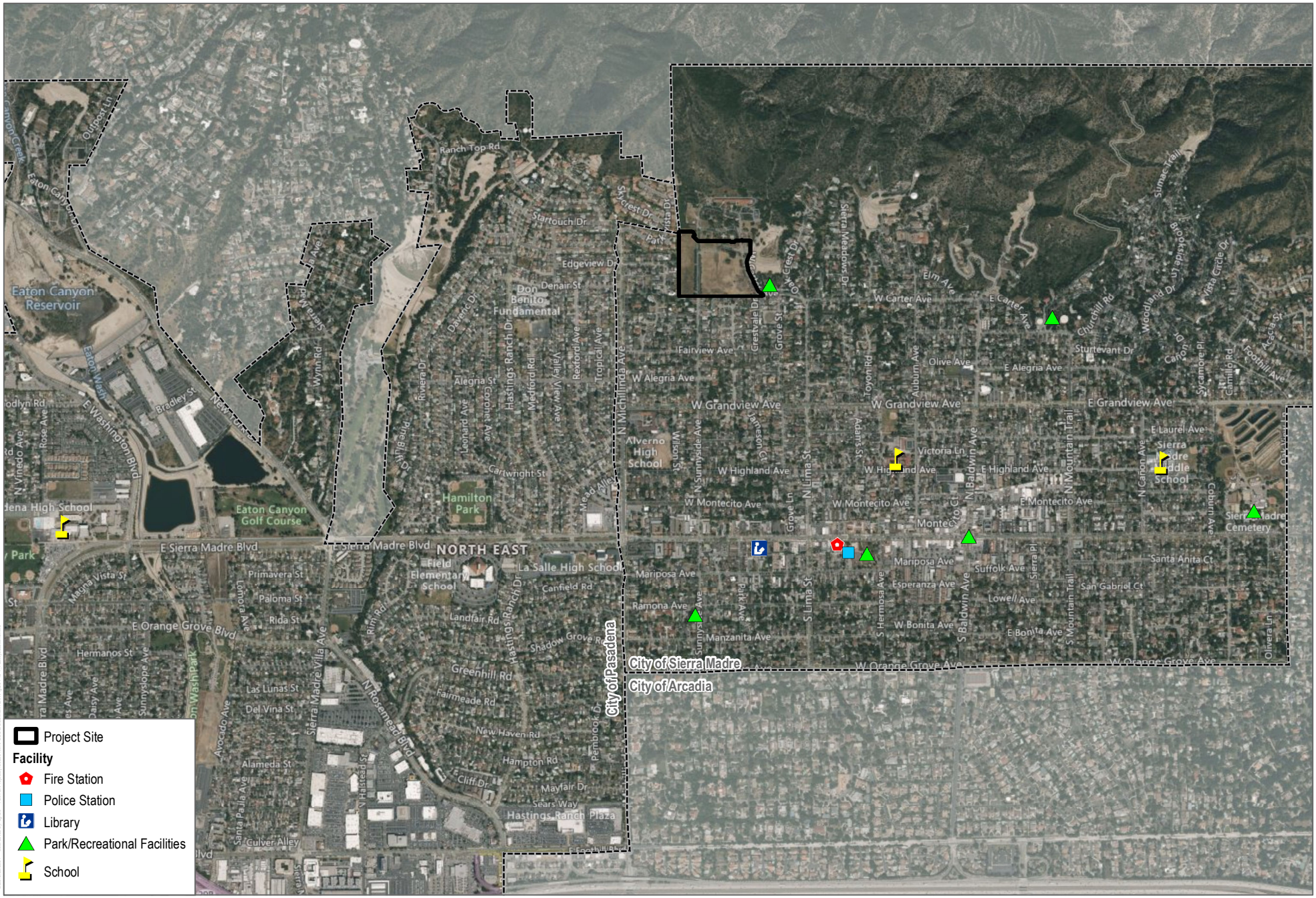

SOURCE: County of Los Angeles 2020; Bing Maps

DUDEK

0 1,000 2,000 Feet

FIGURE 4.15-1

Facility Locations

The Meadows at Bailey Canyon EIR

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4.16 Recreation

This section describes the existing recreation conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.16.1 Existing Conditions

Project Site

There are no recreational facilities currently on the project site.

Project Vicinity

Parks

The proposed project is located within the northwestern portion of the City of Sierra Madre (City). The City maintains six parks across 23 acres within the municipal boundaries (see Figure 4.15-1, Facility Locations, in Section 4.15, Public Services, of this EIR). Bailey Canyon Wilderness Park, approximately 15 acres in size, is the closest park to the project site, located immediately east of the project site. Figure 4.15-1 and Table 4.16-1 detail the City's existing parks and recreational facilities.

Table 4.16-1. City of Sierra Madre Existing Parks and Recreational Facilities

Name	Address	Park/Recreational Facility Size	Description of Amenities	Distance from Project Site
Bailey Canyon Wilderness Park	451 Carter Avenue	15 acres	Picnic areas, hiking trails, signage, native botanical areas, outdoor restrooms, and a kiosk	200 feet
Kersting Court	Intersection of Baldwin Avenue and Sierra Madre Boulevard	2,500 square feet	Small grassy area, picnic tables, and benches	0.80 miles
Memorial Park and Hart Park House Senior Center	222 West Sierra Madre Boulevard	3.5 acres	Playground, outdoor restrooms, picnic areas, a covered pavilion, tennis courts, community gardens, Veteran's Memorial Wall, and the Hart Park House/Senior Center building, which provides recreational opportunities including arts, computer education, gardening, physical fitness activities, health screenings, and educational activities for seniors aged 60 years and over.	0.72 miles

Table 4.16-1. City of Sierra Madre Existing Parks and Recreational Facilities

Name	Address	Park/Recreational Facility Size	Description of Amenities	Distance from Project Site
Milton and Harriet Goldberg Recreation Area	171 North Sunnyside Avenue	0.21 acres	Passive recreation areas, picnic areas, stone benches, native plants, and a sand play area	0.29 miles
Mira Monte/Mount Wilson Trail Park	189 East Mira Monte Avenue	0.34 acres	Playground equipment, picnic tables, open grass areas, restrooms, access to Mount Wilson trail, and the historic Richardson House and Lizzie's Trail Inn	0.77 miles
Sierra Vista Park	611 East Sierra Madre Boulevard	5 acres	Community recreation center office, community room, youth activity center, aquatic center, covered pavilion, picnic areas, playground, tennis courts, volleyball court, basketball court, baseball fields, dog park, and outdoor restrooms	1.4 miles
Youth Activity Center	611 East Sierra Madre Boulevard	N/A	Partnership with YMCA program for youth ages 11 to 17; Monday through Thursday	1.4 miles
Aquatic Center	611 East Sierra Madre Boulevard	N/A	Partnership with Waterworks Aquatics, pool open for swim lessons, lap swimming, water aerobics, swim team, recreational swim and special events	1.4 miles
Senior Center	222 West Sierra Madre Boulevard	N/A	Open Monday through Friday for low-cost lunches for ages 60 years and over; provides recreational opportunities including arts, computer education, gardening, physical fitness activities, health screenings, and educational activities.	0.72 miles

Sources: City of Sierra Madre 2015a; Google Earth 2020

Trails

The City of Sierra Madre is located at the base of the southern foothills of the San Gabriel Mountains, which provides access to over 550 miles of hiking and equestrian trails within the Angeles National Forest (USDA 2010). The Mount Wilson Trail is the closest active recreation opportunity to the project site, located at the corner of Mountain Trail Avenue and East Mira Monte Avenue and approximately 0.77 miles east of the project site.

Recreational Centers

There are no immediate recreational centers within the project site's vicinity. However, the City maintains a few centers within the City, including the Youth Activity Center, Aquatic Center, and Senior Center. The Community Recreation Center, which hosts the Youth Activity Center and the Aquatic Center, is approximately 1.4 miles southeast of the project site, at 611 East Sierra Madre Boulevard. In addition, the City's Senior Center located at 222 West Sierra Madre Boulevard, which is approximately 0.72 miles from the project site (City of Sierra Madre 2015a; Google Earth 2020).

4.16.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to recreation relevant to the proposed project.

State

Quimby Act

California Government Code Section 66477, referred to as the Quimby Act, permits local jurisdictions to require developers to dedicate land and/or pay in-lieu fees towards the conservation of parkland in connection with the approval of a tentative subdivision map or parcel map. The Quimby Act was legislated to encourage the pre-emptive mitigation of developments' impact to parks and open space with the overarching goal of achieving a jurisdictional standard of 3.5 acres of parkland per 1,000 residents. The land dedication and/or fees differ by project and are based on the residential density, parkland cost, and other factors. Land dedication and fees collected pursuant to the Quimby Act may be used for acquisition, improvement, and expansion of park, playground, and recreational facilities or the development of public school grounds.

Local

City of Sierra Madre General Plan

Chapter Four, Community Services, of the City's General Plan outlines goals and policies for various topics, including recreation services. This section of the General Plan describes the existing conditions of parks, recreational facilities, service objectives and policies managed by City's Community Services Department. The following General Plan goals, objectives, and policies relevant to the proposed project with regard to recreation are below (City of Sierra Madre 2015b). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Chapter One: Land Use

Goal 8: Preserve existing and provide additional constructed and natural open space.

Chapter Four: Community Services

Objective C6: Providing quality recreation, leisure and social programs and facilities for the various segments of the Sierra Madre community.

Policy C8.1: Continue a park maintenance program to secure the existing nature and beauty of the City Parks and open space areas.

Policy C8.3: Install and replace existing landscape with native and drought resistant plants in City parks where deterioration has occurred.

Policy C8.4: Identify each recreational site with its name and encompassing facilities with signage visible to the public.

Objective C10: Increasing parkland and recreational facilities in the City.

Policy C10.4: Require that all new commercial and residential subdivision developments provide open space areas on-site for passive or active recreation or contribute fees for public development of such uses.

Objective C11: Coordinating the management of parks and recreation efforts throughout the City.

Policy C11.2: Maintain and update a maintenance and repair plan for existing and future City facilities.

City of Sierra Madre Municipal Code

Title 16 (Subdivision), Chapter 16.44 (Regulations for Dedication of Land for Park and Recreation Land) of the City of Sierra Madre Municipal Code requires parkland dedication or in-lieu park fees for all new developments to ensure the City provides its residents with adequate parks and recreational activities. The dedication of parkland is based on a formula that takes into account the type of dwelling unit (e.g., single-family, duplex, cluster, apartments) and average density being proposed, as outlined in Section 16.44.040 (Formula for Dedication of Land). If no park or recreation facility is designated within the proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the developer is required to, in lieu of dedicating land, pay a fee equal to the value of that land using a formula outlined in Section 16.44.050 (Formula for Fees In Lieu of Land Dedication). The revenue generated from this fee is required to be used only for the purpose of acquiring necessary parkland and developing new or rehabilitating existing parks or recreational facilities reasonably related to serving the subdivision development. Section 16.44.030 (General Standard) sets a general citywide standard of three acres of parkland per 1,000 residents to ensure an adequate amount of neighborhood and community parks exist within the city to serve its residents. The standard is in accordance with the parkland requirements of the Quimby Act (City of Sierra Madre 2020).

4.16.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to recreation are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to recreation would occur if the project would:

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.
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.16.4 Project Design Features

There are no project design features that apply to recreation.

4.16.5 Impacts Analysis

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?

Section 16.44.030 (General Standard) of the Sierra Madre Municipal Code identifies a standard of 3 acres of park and recreation facilities per 1,000 residents (City of Sierra Madre 2020). Based on the City's population of 11,030, the park/recreation to population ratio is 2.09 acres of parkland per 1,000 residents. Therefore, the City currently has a parkland deficiency. The City's General Plan EIR states a need for approximately 10 acres of parkland to reach the desired parkland per resident ratio in the City (City of Sierra Madre 2015a).

As discussed in Section 4.14, Population and Housing, of this EIR, the project is anticipated to add approximately 134 new residents to the City. At least a portion of these new residents are anticipated to frequent the various public parks located in proximity to the project site, including Bailey Canyon Wilderness Park, located approximately 300 feet to the east of the site. The project would also provide a 3.04-acre on-site public park.

In addition to the nearby parks, project residents and nearby residents would have access to the proposed public park. The proposed park would be 3.04 acres in size and located at the southernmost portion of the project site (see Figure 2-3, Proposed Park Conceptual Plan). The proposed park would feature landscaped mounds, one pond, pedestrian paths, shared open turf/play areas, adventure/natural play equipment, native garden beds, picnic areas, benches, overlook areas, a restroom building, a water fountain, landscaping, water quality facilities, and a small parking lot. The park's location along the southern boundary of the site provides enhanced connectivity to the Bailey Canyon Wilderness Park to the east. The location also provides the closest access to existing residential uses. Further, each residential unit would be provided with private open space such as balconies for individual units. Thus, the project would provide opportunities for passive and active recreation on site. These on-site amenities would provide an alternative to off-site public parks and recreational facilities, allowing the project's residents to recreate on the project site while incrementally reducing potential impacts to off-site public parks.

Although the City is currently experiencing a deficit in the desired parkland ratio, the project would be subject to the State's Quimby Act and the Sierra Madre Municipal Code at such time a tentative subdivision map is submitted to the City. More specifically, the Quimby Act allows the City to require development projects to set aside land, donate conservation easements, or pay in-lieu fees for park improvements as part of the subdivision map process. Title 16 (Subdivision), Chapter 16.44 (Regulations for Dedication of Land for Park and Recreation Land) of the Sierra Madre Municipal Code requires parkland dedication or in-lieu park fees for all new developments. The dedication of parkland is based on a formula that takes into account the type of dwelling unit and average density being proposed, as outlined in Section 16.44.040 (Formula for Dedication of Land). Using Alternative 2 (Formula Based on Dwelling Units) to calculate the number of acres of parkland dedication required under the proposed project would compare the proposed 42 detached single-family units to the standard acres per dwelling unit of 3 acres per 250 dwelling units (City of Sierra Madre 2020). Thus, the proposed project would be required to provide 0.5 acres of parkland on-site. As mentioned above, the project would include 3.04 acres for a neighborhood public park. Therefore, the project applicant would provide more than the required amount of parkland in compliance with the Sierra Madre Municipal Code.

Due to the inclusion of a dedicated neighborhood public park on-site, the population growth that would occur as a result of the project is not anticipated to result in the overuse of existing park and recreation facilities such that the need for new or physically altered park and recreation facilities would be necessary. Therefore, impacts associated with park and recreation facilities would be **less than significant.**

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?***

Under existing conditions, the project site is an undeveloped lot. The proposed project would result in the construction of 42 detached single-family residential homes with a 3.04-acre neighborhood public park to be located on the southernmost portion of the project site.

Construction

Construction activities related to the proposed project would involve introducing heavy machinery to the project site for grading, excavation, and development of the 3.04-acre neighborhood public park. Impacts associated with the project construction would be temporary. Staging of construction equipment and construction activities would be implemented in accordance with the City's existing regulations. In addition, implementation of the neighborhood public park would comply with the proposed design guidelines associated with The Meadows at Bailey Canyon Specific Plan.

Potential adverse physical effects resulting from the construction of the project as a whole, including construction of the proposed park, are addressed throughout this EIR as part of the proposed project, and with incorporation of proposed mitigation measures impacts associated with the construction of the neighborhood public park would be **less than significant**.

Operation

During operation of the proposed project, the neighborhood park would be available to the public. The park's location would be accessible to existing nearby residential uses. Residents and visitors would be able to access the park along the southern boundary of the project site. In addition, the proposed park would be immediately adjacent to the entrance of Bailey Canyon Wilderness Park to the east. The location of both recreational opportunities provides enhanced connectivity and access, which would reduce impacts related to vehicle trip generation. Lastly, as discussed above, potential adverse physical effects resulting from the project as a whole, including operation of the proposed park, are addressed throughout this EIR as part of the proposed project, and with incorporation of proposed mitigation measures impacts associated with the construction of the neighborhood public park. As such, operational impacts associated with the proposed park would be **less than significant**.

4.16.6 Mitigation Measures

The project would not result in significant impacts related to the proposed park; therefore, no mitigation is required.

4.16.7 Level of Significance After Mitigation

All impacts would be **less than significant**. No mitigation is required.

4.17 Transportation

This section describes the existing transportation conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. The discussion in this section is based on the Vehicle Miles Travelled (VMT) Assessment for the Proposed Sierra Madre Residential Project (VMT Assessment), prepared by Fehr and Peers in October 2020. The complete VMT Assessment is provided in Appendix H of this Environmental Impact Report (EIR).

4.17.1 Existing Conditions

Regional Circulation and Local Access

The project site is located within the northwestern portion of the City of Sierra Madre (City). Regional access to and from the project is possible via Michillinda Avenue, located to the west of the site, which the only street considered a major street in the City's General Plan Circulation Element, and Baldwin Avenue, located approximately 0.61 miles west of the project site. Michillinda Avenue is shared by the City of Pasadena, located to the west of the project site, and the City of Arcadia, located to the south and east of the City, and provides a connection to Interstate 210. Michillinda Avenue is 750 feet west of the project site and can be accessed via several local streets off North Sunnyside Avenue. Baldwin Avenue, located approximately 0.61 miles west of the project site, also provides direct access to Interstate 210, and can be accessed via Carter Avenue which extends east of the site. Sierra Madre Boulevard, located approximately 0.6 miles south of the project site, is classified as a collector street in the Sierra Madre General Plan Circulation Element (City of Sierra Madre 2015). Sierra Madre Boulevard also be accessed off North Sunnyside Avenue and provides another direct connection to Pasadena and Arcadia.

Local Roadway Circulation and Access

There are currently two access roads that run north/south through the project site to the Mater Dolorosa Retreat Center. North Sunnyside Avenue, which crosses through the western portions of the site, and Carter Avenue, which extends through the eastern portion of the site. An additional access road traverses the northern portion of the site from east to west. Public access for both roadways currently ends at the Mater Dolorosa Retreat Center's gates within the southern portion of the site.

Pedestrian and Bike Facilities

Pedestrian facilities in the vicinity of the project site are limited. North Sunnyside Avenue and Carter Avenue currently do not provide sidewalks. Sierra Keys Drive, located approximately 160 feet to the south of the site, provides a sidewalk on one side. Bailey Canyon Wilderness Park, located to the east of the site, provides public hiking trails.

Although there were no defined bicycle facilities within the City at the time the City's General Plan was adopted, the City's General Plan identified the need for a bike lane along Sierra Madre Boulevard, through the length of the City (City of Sierra Mare 2015). This bike lane has been recently installed between Lima Street and Michillinda Avenue, approximately 0.6 miles south of the project site, and on South Baldwin Avenue from West Orange Grove Avenue and Suffolk Avenue, approximately 0.9 miles southeast of the project site. In addition, streets within the

City, particularly Local Collectors and Local Streets, are generally wide, with enough cross-sectional space to accommodate bicyclists even when parking is provided.

Transit Facilities

The surrounding area is served by transit provided by the Los Angeles County Metropolitan Transportation Authority. Transit connection for routes 487 and 268 would go to the transit stop on North Sunnyside Avenue and Sierra Madre Boulevard, located 0.6 miles south of the project site (MTA 2020a). In addition, the City is served by the Gateway Coach, a fixed route public transportation service provided by the City. The Gateway Coach runs from 10:00 AM to 2:00 PM. The closest stops to the project site are located at the intersection of North Sunnyside Avenue and West Grand View Avenue, approximately 0.28 miles south of the site, and at the intersection of Michillinda Avenue and West Grand View Avenue, approximately 0.34 miles southwest of the site (City of Sierra Madre 2018).

4.17.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to transportation relevant to the proposed project.

State

Senate Bill 743

In September 2013, the Governor's Office signed State Bill (SB) 743 into law, starting a process that fundamentally changes the way transportation impact analysis is conducted under the California Environmental Quality Act (CEQA). Within the State's CEQA Guidelines, these changes include the elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. The guidance identifies vehicle miles traveled (VMT) as the most appropriate CEQA transportation metric, along with the elimination of auto delay/LOS for CEQA purposes statewide. The justification for this paradigm shift is that auto delay/LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas (GHG) emissions. The legislation was also intended to incentivize development in and around Transit Priority Areas (TPAs) and High-Quality Transit Corridors (HQTCs), and to encourage high-density infill and mixed-use projects. In January 2016, the Governor's Office of Planning and Research (OPR) issued Draft Guidance, which provided recommendations for updating the State's CEQA Guidelines in response to SB 743 and recommended practice for VMT analysis in an accompanying Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory). OPR's most recent Technical Advisory is dated December 2018. Per SB 743, cities are required to adopt VMT thresholds by July 2020. The City adopted its Transportation Study Guidelines for Vehicle Miles Traveled Assessment, which includes transportation impact guidelines and VMT analysis methodology in September 2020 (City of Sierra Madre 2020a).

Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP), run by the California Transportation Commission, is a multi-year, statewide, intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes, metropolitan plans, and Title 23 of the Code of Federal Regulations

(CFR). The latest version of the STIP was adopted on March 25, 2020 (California Transportation Commission 2020). The STIP is prepared in cooperation with the California Department of Transportation (Caltrans), the metropolitan planning organizations, and the regional transportation planning agencies. The regional transportation planning agency that includes the City is the San Gabriel Valley Council of Governments, which is a subset of the Southern California Association of Governments (SCAG). The STIP contains all capital and non-capital transportation projects or identified phases of transportation projects for funding under the Federal Transit Act and CFR Title 23, including federally funded projects.

Interregional Transportation Improvement Program

The 2015 Interregional Transportation Improvement Program (ITIP) was approved by Caltrans in December 2015. California Government Code Section 14526 specifies that the purpose of the ITIP is to fund projects that improve interregional movement for people and goods across California on the State Highway System and develop Intercity Passenger Rail corridors of strategic importance. The ITIP is one of many state funding programs that collectively invest in transportation infrastructure, maintenance and operations and is prepared by Caltrans for submittal to the California Transportation Commission to assist with recommendations for projects in the STIP.

Local

City of Sierra Madre General Plan

The City's General Plan is a long-range policy document which lays out the framework for all future growth and development within the City. The City adopted the 2015 General Plan in July 2015 and includes the following goals, objectives, and policies relevant to the proposed project with regard to transportation (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Objective L4: Mitigating the impacts of new development on the City's open space, trees, infrastructure, water, transit services, the character of existing development, and other public needs.

Objective L5: Preserving the existing grid street pattern which promotes community life.

Policy L5. 1: Prohibit the use of cul-de-sacs and require through streets in new subdivisions except when no other access is physically feasible due to property ownership, parcel location or other physical factors.

Objective L51: Developing a balanced and multi-modal transportation system to serve the needs of all roadway users, including motorists, public transit patrons, pedestrians, and cyclists.

Policy L51.2: Limit the development of new roadways or the expansion of existing roadways.

Policy L51.5: Encourage and support the use of non-automotive travel throughout the City.

Objective L52: Improving streets to maintain levels of service, vehicular, cyclist and pedestrian safety.

Policy L52.8: Require the incorporation of bicycle facilities into the design of land use plans and capital improvements, including bicycle parking within new multi-family and non-residential sites or publicly accessible bicycle parking.

Policy L52.9: Explore the possibility of sidewalk continuity where feasible.

Objective L53: Protecting residential neighborhoods from the intrusion of through traffic.

Housing Policy 5.4: Incorporate transit and other transportation alternatives such as walking and bicycling into the design of new development.

Circulation Goal 1. A balanced transportation system which accommodates all modes of travel including automobiles, pedestrians, bicycles, and transit users.

Circulation Goal 2. Safe and well-maintained streets.

Circulation Goal 3. Preservation of quiet neighborhoods with limited thru traffic.

Objective C30: Improving traffic safety.

Policy C30.2: Continue to evaluate measures, such as speed bumps, that reduce speeding.

Policy C30.3: Maintain safety and efficient circulation without impacting the village atmosphere.

4.17.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to transportation are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to transportation would occur if the project would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

VMT Impact Thresholds

The updated CEQA Guidelines themselves do not establish a significance threshold and the OPR's Technical Advisory recommends a threshold of significance for residential, office and other land uses. While the recommended threshold for per capita or per employee for residential or office projects, respectively, is 15% below that of existing development, lead agencies can use more location-specific information to develop their own specific threshold for other project/land use types. The City has adopted criteria related to VMT evaluation in the City of Sierra Madre Transportation Study Guidelines for Vehicles Traveled Assessment, September 2020 (City of Sierra Madre 2020a).

Per the City's criteria, a VMT-related impact would be considered significant if implementation of the proposed project meets the following two conditions:

- The baseline project-generated VMT, per service population;[1] home-based VMT per capita; or home-based-work VMT per employee exceeds the 15% below the Northwest Region[2] baseline[3] VMT; or
- The cumulative project-generated VMT exceeds 15% below the Northwest Region baseline VMT.

4.17.4 Project Design Features

There are no project design features that apply to transportation.

4.17.5 Impacts Analysis

1. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

The City's General Plan contains objectives and policies that support alternative transportation measures (Objective L51, L51.2, L51.3), improve safety (Objective L51, Objective C30, Policy C30.2, Policy C30.3), and encourage biking and pedestrian use (Objective L52, Policy L52.8) (see Section 4.17.2, Relevant Plans, Policies, and Ordinances, for these policies).

The proposed project would involve development of a 3.04-acre dedicated neighborhood park, to be located within the southern portion of the site (see Figure 3-3, Proposed Park Conceptual Plan, in Chapter 3, Project Description, of this EIR). The proposed park would involve pedestrian paths as well as enhanced connectivity to the Bailey Canyon Wilderness Park to the east. In addition, the proposed project would include a landscaped parkway and sidewalk on the west side of North Sunnyside Avenue and Carter Avenue, and a sidewalks within the south sides of proposed A, B, and C Streets, enhancing pedestrian safety and mobility, consistent with Objective L51 and Policy C30.3. Further, as discussed in Section 4.11, Land Use and Planning, of this EIR, the project would provide an internal circulation system that would facilitate safe and efficient access to the site from North Sunnyside Avenue while minimizing traffic impacts to adjacent residential streets. The proposed project would include reconfiguration of North Sunnyside Avenue, located within the western portion of the site, and improvements of Carter Avenue, located within the eastern portion of the site. Lastly, three additional streets that run east to west would be provided within the project site. This includes Streets A, B, and C (see Figure 3-2, Conceptual Site Plan, in Chapter 3 of this EIR). The proposed street sections are shown in Figure 3-6, Proposed Street Sections, in Chapter 3 of this EIR. As such, through creating an efficient and safe transportation system, the proposed project would be consistent with Land Use Element Objective L52 and C30, and Policy C30.3. As discussed in Section 4.17.1, Existing Conditions, the surrounding area is served by transit provided by the Los Angeles County Metropolitan Transportation Authority (MTA). While there are no bus routes that travel adjacent to the project site, transit connection for route 78 and 268 would go to the transit stop on North Sunnyside Avenue

1 The City has selected VMT per service population for its impact threshold. However, the City will allow for use of VMT to be isolated by trip purpose with review and approval of the City Traffic Engineer.

2 The City is located in the Northwest region of San Gabriel Valley Council of Governments.

3 Baseline data is available from the SCAG model or appropriate sub-area model approved by the City Traffic Engineer. This data is also available in the San Gabriel Valley Council of Governments VMT Assessment Tool. Baseline conditions typically represent the year of the Notice of Preparation (NOP). Interpolation between the base and future year model will be required to identify the VMT representative of the baseline year.

and Sierra Madre Boulevard, located 0.6 miles south of the project site (MTA 2020a). In addition, stops for the Gateway Coach are located at the intersection of North Sunnyside Avenue and West Grand View Avenue, approximately 0.28 miles south of the site, and at the intersection of Michillinda Avenue and West Grand View Avenue, approximately 0.34 miles southwest of the site (City of Sierra Madre 2018). Although no bicycle facilities and improvements are proposed under the project, the project would not impact existing bicycle facilities in the vicinity of the project, including the existing bicycle lanes within Sierra Madre Boulevard. Thus, the future residents of the project would have access to major roadways, freeways, transit, bicycle, and pedestrian facilities. As such, the project would be consistent with Objective L51 of the City's Land Use Element. Therefore, impacts associated with the project conflicting with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, would be **less than significant.**

2. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Prior to initiating a VMT assessment, the City has identified project screening criteria pursuant to CEQA guidance provided by the Office of Planning and Research (OPR). If a project meets any one of the following three screening criteria, then no further VMT assessment would be required. The three criteria, as well as an analysis as to whether or not the project meets this criterion, is provided below.

1. Project Type Screening

OPR identified local-serving project types that may be presumed to have a less than significant impact, absent substantial evidence to the contrary. These include uses such as resident and/or employee-serving uses, including retail, daycare facilities, parks, gas stations. This screening criteria also allows for projects generating less than 110 daily vehicle trips[4] typically corresponding with the following:

- 11 single-family housing units
- 16 multi-family, condominiums, or townhouse housing units

The proposed project would result in development of 42 single-family subdivisions. As shown in Table 4.17.1, the proposed project would generate 396 daily trips, 31 AM peak trips and 42 PM peak-hour trips. Therefore, the project cannot be screened out under this criterion.

Table 4.17-1. Project Trip Generation (Weekday)

Trip Generation Rates*								
			AM Peak Hour			*PM Peak Hour*		
Land Use	*Daily Trip Rate*	*Unit*	*% In*	*% Out*	*Total*	*% In*	*% Out*	*Total*
Single-Family Detached Housing (ITE Code 210)	9.44	DU	25%	75%	0.74	63%	37%	0.99

[4] This threshold ties directly to the OPR technical advisory and notes that CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in and environmentally sensitive area (CEQA Guidelines Section 15301(e)(2)). Typical project types for which trip generation increases relatively linearly with building footprint (i.e. general office building, single tenant office building, office park, and business park) generate or attract an additional 110–124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 100 or fewer trips could be considered not to lead to a significant impact.

Table 4.17-1. Project Trip Generation (Weekday)

Trip Generation									
				AM Peak Hour			PM Peak Hour		
Land Use	*Total No. of Units*	*Unit*	*Daily*	*In*	*Out*	*Total*	*In*	*Out*	*Total*
Single-Family Detached Housing	42	DU	396	8	23	31	26	16	42
Existing (Vacant Building)	0	ksf	0	0	0	0	0	0	0
Total Net New Trip Generation			**396**	**8**	**23**	**31**	**26**	**16**	**42**

* Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.
DU = dwelling unit; ksf = thousand square feet

2. Transit Priority Area (TPA) Screening

Projects located within a TPA may be presumed to have a less than significant impact. A TPA[5] is defined as a half-mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. As mentioned previously, bus route 487 and 268 provides service to the transit stop on North Sunnyside Avenue and Sierra Madre Boulevard, located 0.6 miles south of the project site. Bus route 487 operates every hour throughout the day, Monday through Friday, and on Saturdays, Sundays, and holidays (MTA 2020b).The frequency of bus route 268 varies from 26 minutes to 1 hour throughout the day, Monday through Friday, and approximately 1 hour on Saturdays, Sundays, and holidays (MTA 2020c). Since the frequency of the bus service is longer than 15 minutes along the route, it is not considered a high-quality transit corridor. Therefore, the proposed project is not located within a TPA. and cannot be screened out under this criterion.

3. Low VMT Area Screening

Residential projects located within a low VMT-generating area may be presumed to have a less-than-significant impact and thus be screened out. The project's VMT was estimated using the SCAG 2016 Regional Transportation Plan (RTP) 2012 Base Year model. The following methods can be used to calculate the project's VMT:

- The Production/Attraction (PA) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in a project's study. Productions are land use types that generate trips (residences) and attractions are land use types that attract trips (employment). The PA method does not include external trips that have one trip end outside of the model boundary (internal-external trips), and therefore do not include those trips in the VMT estimates. This approach also only works for individual uses and is not recommended for mixed-use projects as the internalization between uses is not captured in the estimates. This method is used to calculate a project's VMT based on trip purpose, i.e. home-based work VMT per capita.
- The Origin/Destination (OD) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area. Origins are all vehicle trips that start in a specific traffic analysis zone,

[5] Per Pub. Resources Code, Section 21064.3, a 'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. Per Pub. Resources Code, Section 21155, 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.

and destinations are all vehicle trips that end in a specific traffic analysis zone. This method provides a more complete capture of all travel within the study area and can be normalized based on the number of residents and employees i.e. service population present in the zone.

The City accepts the project-generated VMT using PA method if appropriate. The project has been previously evaluated under a pilot study in San Gabriel Valley Council of Governments SB 743 project, using Home-based VMT per capita metric and failed in screening. However, the project is located in a mixed-use area as the Mater Dolorosa Retreat Center, located directly to the north of the site, which attracts trips other than Home-based trips. Therefore, based on City's input, it was deemed appropriate to evaluate the VMT impact from all trip purposes and not just home-based work trips and use the OD method to determine the screening result. Additionally, the City recommends using service population as its VMT metric and threshold, unless VMT assessment by trip purpose and per capita or employee is required and approved by the City Traffic Engineer.

As defined by the City, a low VMT-zone has a VMT per service population of 15% or more below the Northwest Regional Baseline VMT. Per Table 4.17-2, the proposed project would have a VMT per service population of 31.01 and 30.47, which is below the 2012 baseline Northwest Region VMT Service Population for the 2012 Base Year of 37.02 from the SCAG model (see Figure 4.17-1, VMT per Service Population). Therefore, the proposed project would satisfy the screening criteria based upon the OD method.

Table 4.17-2. Origin-Destination Vehicle Miles Travelled Analysis

Analysis Metrics: OD VMT	2012 Base Year	2040 Cumulative Year
Project TAZ 22212000 VMT per Service Population	*31.01*	*30.47*
2012 Baseline Northwest Region VMT per Service Population	37.02	
Percent Difference with 2012 Baseline	-16%	-18%

Source: Appendix H.
OD = Origin-Destination; VMT = vehicle miles travelled; TAZ = Traffic Analysis Zone

Therefore, as discussed above and shown in Table 4.17-2, the proposed project's VMT is 16% and 18% below the 2012 baseline VMT for the Northwest region under 2012 and 2040 conditions, respectively. Therefore, the proposed project would be screened out using the Low VMT Area Screening criteria and can be presumed to have a less than significant VMT impact. Therefore, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and impacts would be **less than significant.**

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)?

The proposed project would include reconfiguration of North Sunnyside Avenue, located within the western portion of the site, which would be moved farther to the west. In addition, the project would involve improvements of Carter Avenue. North Sunnyside Avenue would be a public street with one vehicular lane in each direction providing primary vehicular access to and from the project site (specifically from the proposed public park), internal circulation for the residential land, and access through the project site to the Mater Dolorosa Retreat Center. It will have a maximum 56.5-foot right-of-way with curbs and gutters, parking on both sides, a landscaped parkway and sidewalk on the west side, and tree plantings on the east side of the street. Carter Avenue would provide secondary egress and ingress access to the site, as well as internal circulation for the residential land uses. Carter Avenue would have a maximum 46-foot right-of-way with parking, curbs and gutters, parkways and tree plantings, and parking on the west side of the street.

Lastly, three additional streets that run east to west would be provided within the project site. This includes Streets A, B, and C (see Figure 3-2, Conceptual Site Plan, in Chapter 3 of this EIR). Streets A, B, and C would be public streets with one vehicular lane in each direction providing internal circulation for the residential land uses. Street A would have a maximum 38.5-foot right-of-way. Streets B and C would have a maximum 42.5-foot right-of-way. All three streets would include curbs and gutters, a sidewalk, parkway and parking on the south side of the street, and tree plantings on the north side of the street. The proposed street sections for all proposed streets are shown in Figure 3-6, Proposed Street Sections, in Chapter 3 of this EIR.

The project does not include any project elements that could potentially create a traffic hazard for motor vehicles, bicycles, or pedestrians due to a proposed, non-standard design feature. The proposed project's circulation system is designed to interconnect with the existing adjacent public street system and discourage cut-through automobile traffic. Access points would not create a hazard for vehicles or people entering or exiting the site. Additionally, the project would not result in a hazardous roadway design or unsafe roadway configuration; place incompatible uses on existing roadways; or create or place curves, slopes, or walls that impede adequate sight distance on a roadway. Therefore, the project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) and impacts would be **less than significant**.

4. Would the project result in inadequate emergency access?

The project may result in a temporary increase in traffic on roadways surrounding the project site due to increased truck loads or the transport of construction equipment to and from the project site during the construction period. However, all construction activities including staging would occur in accordance with City requirements (such as Sierra Madre Municipal Code Chapter 17.30, which requires that streets be maintained free and clear during construction), which would ensure that adequate emergency access to the project site in the event of an emergency or evacuation order would be provided during construction of the project. As discussed in Section 4.9, Hazards and Hazardous Materials, of this EIR, the City has not adopted an emergency response plan or emergency evacuation plan. However, the City is in the process of preparing a Local Hazard Mitigation Plan (LHMP) and a draft was released for public review in February 2020 (City of Sierra Madre 2020b). The purpose of a LHMP is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the City. The proposed project would not impair implementation of the LHMP once adopted, as the proposed project would not exacerbate the potential for natural hazards or interfere with emergency services. Additionally, the proposed project would be adequately served by emergency response services and provide emergency access throughout the project site, as described in Section 4.15, Public Services, of this EIR. Lastly, the proposed project would be required to comply with the recommendations of the Fire Protection Plan (FPP), per PDF-WF-1 (Appendix F2). Per the FPP, project site access, including road widths and connectivity, will be consistent with the City's roadway standards and the 2019 California Fire Code (CFC) Section 503. Specific requirements for provision of fire apparatus access roads is provided in Appendix F2. Therefore, through compliance with all existing requirements and recommendations of the FPP, the project would not result in inadequate emergency access; impacts would be **less than significant.**

4.17.6 Mitigation Measures

Impacts to transportation would be less than significant. No mitigation would be required.

4.17.7 Level of Significance After Mitigation

Impacts to transportation would be **less than significant.**

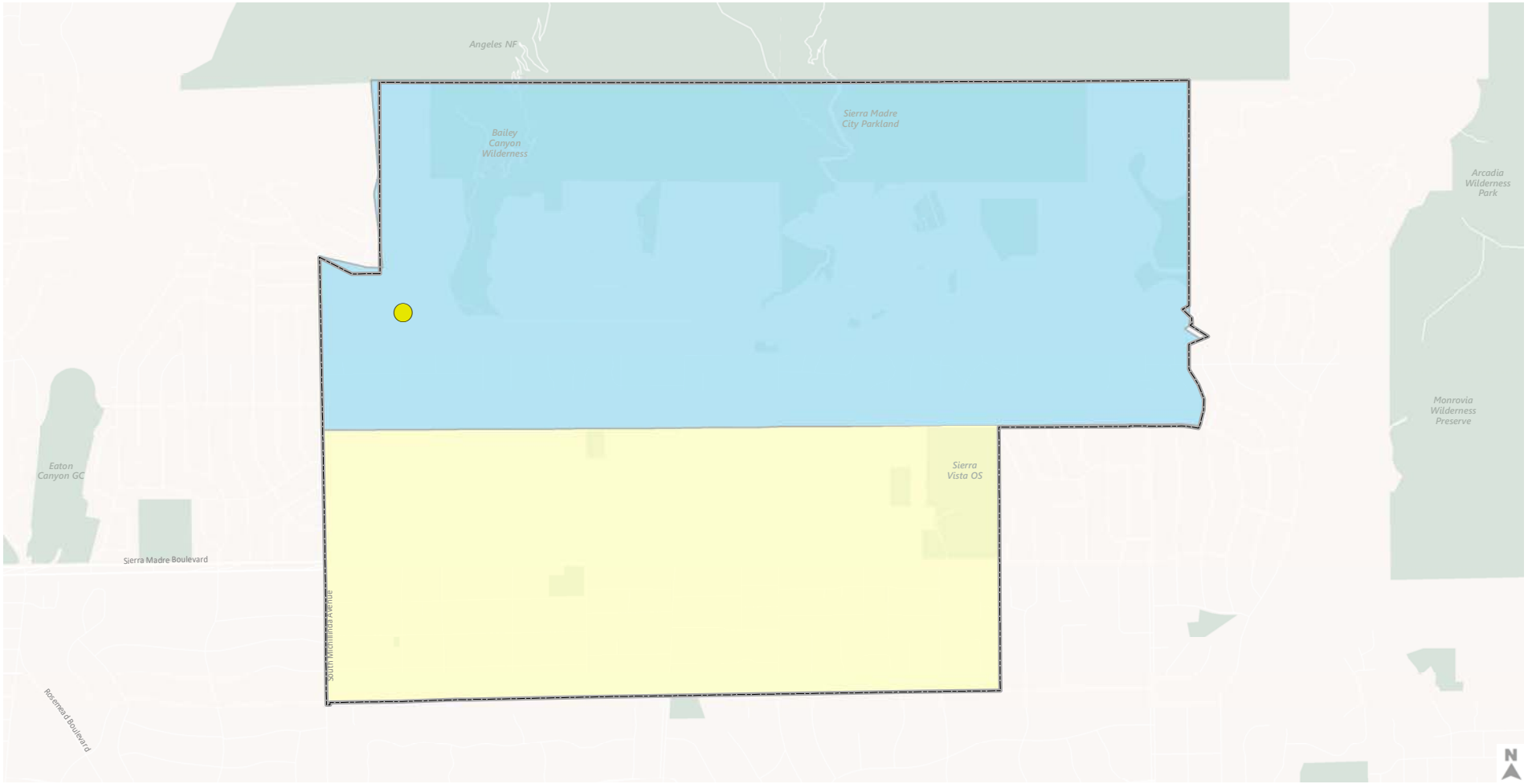

FIGURE 4.17-1

VMT per Service Population

The Meadows at Bailey Canyon EIR

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4.18 Tribal Cultural Resources

This section describes the existing tribal cultural resources (TCRs) conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.18.1 Existing Conditions

Project Site and Vicinity

An Archaeological Resources Assessment was prepared for the proposed project and is included as Appendix D2 to this Environmental Impact Report (EIR). The Archaeological Resources Assessment contains a discussion on Native American coordination which is incorporated herein by reference.

SCCIC Records Search

A California Historical Resources Information System (CHRIS) records search was previously requested by Brian F. Smith and Associates and completed by South Central Coastal Information Center (SCCIC) Staff for the project site and a 1-mile records search buffer on June 9, 2020. This search included the SCCIC's collections of mapped prehistoric, historic, and built environment resources, Department of Parks and Recreation Site Records, technical reports, and ethnographic references. Additional consulted sources included historical maps of the project site, the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historic Property Data File, the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. Dudek reviewed the SCCIC records to determine whether implementation of the proposed project would have the potential to impact known and unknown cultural resources, including TCRs (Appendix D2).

Previously Conducted Cultural Resource Studies

The SCCIC records indicate that 17 previous cultural resource studies have been conducted within the records search area between 1993 and 2016. None of these studies are mapped as overlapping/intersecting the project site. The entirety of the project site has not been subject to any previous investigations. See Table 4.5-1 in Section 4.5, Cultural Resources, of this EIR for a summary of all 17 previous cultural resources studies within the records search area.

Previously Recorded Cultural Resources

The SCCIC records indicate that 56 previously recorded cultural resources are located within the records search area. Of these, two resources are historic-period archaeological sites and the remaining 54 are historic built environment resources. None of the resources are TCRs and none are located within the project site. See Tables 4.5-2 and 4.5-4 in Section 4.5, Cultural Resources, for lists of these previously recorded historic built environment resources and archaeological sites, respectively.

Native American Coordination

NAHC Sacred Lands File Search

As part of the process of identifying cultural resources within or near the proposed project site, Dudek contacted the Native American Heritage Commission (NAHC) on October 6, 2020, to request a review of the Sacred Lands Files (SLF). The NAHC replied via email on October 8, 2020, stating that the SLF search was completed with negative results. Because the SLF search does not include an exhaustive list of Native American cultural resources, the NAHC provided a list of eight Native American individuals that should be contacted for more information on potential tribal sensitivities regarding the proposed project. No additional tribal outreach was conducted by Dudek; however, in compliance with Assembly Bill (AB) 52 and Senate Bill (SB) 18, the City of Sierra Madre has contacted all NAHC-listed traditionally geographically affiliated tribal representatives that have requested project notification. Documents related to the NAHC SLF search are included in Appendix D2.

Assembly Bill 52 Compliance

The proposed project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the California Environmental Quality Act (CEQA) process, and that the lead agency notify California Native American Tribal representatives that have requested notification who are traditionally or culturally affiliated with the geographic area of the project site. All records of correspondence related to AB 52 notification and any subsequent consultation are on file with the City of Sierra Madre and included in Confidential Appendix D in Appendix D2.

Senate Bill 18 Compliance

The proposed project is subject to compliance with SB 18 (Government Code Section 65352.3), which requires local governments to invite California Native American Tribal representatives to participate in consultation about proposed General Plan and Specific Plan adoptions or amendments. The City of Sierra Madre is considering an amendment to the General Plan and adoption of a Specific Plan for the proposed project site and as such, initiated SB 18 consultation. All records of correspondence related to SB 18 notification and any subsequent consultation are on file with the City of Sierra Madre.

Field Survey

Methods

As part of the Archaeological Resources Assessment prepared for the proposed project, an intensive-level survey was conducted on the project site. Survey methods consisted of a pedestrian survey conducted in parallel transects, spaced no more than 15 meters apart (approximately 50 feet), over the entire proposed project site, from east to west. Deviations from transects only occurred in areas containing steep slopes, dense vegetation, or impassible natural features. The ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historical artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. No artifacts were collected during the survey (Appendix D2).

All fieldwork was documented using field notes and an Apple Generation 6 iPad (iPad) equipped with ESRI Collector and Avenza PDF Maps software with close-scale georeferenced field maps of the proposed project site, and aerial photographs. Location-specific photographs were taken using the iPad's 8-mega-pixel resolution camera. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California office. All field practices met the Secretary of Interior's standards and guidelines for a cultural resources inventory (Appendix D2).

Results

The intensive-level archaeological survey of the project site was conducted October 30, 2020, by Dudek archaeologist, Linda Kry. Ground visibility throughout the proposed project site was generally good (80%–90%). The site generally slopes south and includes terraces immediately south of the Mater Dolorosa Retreat Center. Soils within the project site are consistent with soils defined by the United Stated Department of Agriculture (USDA). The project site is generally undeveloped with ornamental trees (approximately 10%) and landscaped areas, concrete retaining walls along the northern perimeter of the site, including access roads through the site lined with rocks. A portion of the northeast area of the project site, immediately south of the staff house and garage associated with the Mater Dolorosa Retreat Center, was partially covered on the surface with gravel. Visible disturbances to the project site include site maintenance activities and activities associated with the Mater Dolorosa Retreat Center. Additionally, the landscape has an undulating terrain, with bioturbation activities throughout (Appendix D2). Photographs taken during the archaeological filed survey are provided in Appendix D2.

The intensive-level archaeological survey resulted in the identification of widely dispersed cultural material on the surface of the site associated with the Mater Dolorosa Retreat Center. However, the archaeological survey did not identify in situ archaeological resources or features, including TCRs (Appendix D2).

4.18.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal plans, policies, or ordinances related to TCRs relevant to the proposed project.

State

California Environmental Quality Act

CEQA was amended in 2014 through AB 52, which created a new category of "tribal culture resources" that must be considered under CEQA, and applies to all projects that file a Notice of Preparation or notice of negative declaration or mitigated negative declaration on or after July 1, 2015. AB 52 requires lead agencies to provide notice to and begin consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a project if that tribe has requested, in writing, to be kept informed of projects by the lead agency prior to the determination whether a negative declaration, mitigated negative declaration, or environmental impact report will be prepared. If a tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe. AB 52 also specifies mitigation measures that may be considered to avoid or minimize impacts on TCRs. Specifically, California Public Resources Code (PRC) Section 21074 provides the following guidance:

(a) Tribal Cultural Resources are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Cultural Resources.

(B) Included in a local register of cultural resources as defined in subdivision (k) of §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 §5024.1. In applying the criteria set forth in subdivision (c) of §5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

In the event that Native American human remains or related cultural material are encountered, Section 15064.5(e) of the state CEQA Guidelines (as incorporated from PRC Section 5097.98) and Health and Safety Code Section 7050.5 define the subsequent protocol. In the event of the accidental discovery or recognition of any human remains, excavation or other disturbances shall be suspended of the site or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that a county-approved coroner be contacted to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native American, the coroner must contact the NAHC within 24 hours. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 (14 CCR 15064.5[e]).

California State Assembly Bill 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and that is either:

- On or determined to be eligible for the California Register of Historical Resources or a local historic register; or
- 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.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of

avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

Senate Bill 18

The Local and Tribal Intergovernmental Consultation process, commonly known as Senate Bill (SB) 18 was signed into law September of 2004 and took effect March 1, 2005. SB 18 refers to PRC Section 5097.9 and 5097.995, which defines cultural places as:

- Native American sanctified cemetery place of worship, religious or ceremonial site, or sacred shrine (PRC Section 5097.9).
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (PRC Section 5097.993).

SB 18 established responsibilities for local governments to contact, provide notice to, refer plans to, and consult with California Native American tribes that have been identified by the NAHC and if that tribe requests consultation after local government outreach as stipulated in Government Code Section 65352.3. The purpose of this consultation process is to protect the identity of the cultural place and to develop appropriate and dignified treatment of the cultural place in any subsequent project. The consultation is required whenever a general plan, specific plan, or open space designation is proposed for adoption or to be amended. Once local governments have sent notification, tribes are responsible for requesting consultation. Pursuant to Government Code Section 65352.3(a)(2), each tribe has 90 days from the date on which they receive notification to respond and request consultation.

In addition to the requirements stipulated previously, SB 18 amended Government Code Section 65560 to "allow the protection of cultural places in open space element of the general plan" and amended Civil Code Section 815.3 to add "California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places."

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5[b]). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact NAHC within 24 hours (Section 7050.5[c]). NAHC will notify the "most likely descendant." With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

Local

There are no local plans, policies, or ordinances related to TCRs relevant to the proposed project.

4.18.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to TCRs are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to TCRs would occur if the project would:

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:
    a. 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).
    b. 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.

4.18.4 Project Design Features

There no project design features that apply to TCRs.

4.18.5 Impacts Analysis

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:

a. 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)?

As discussed in Section 4.18.1, Existing Conditions, no cultural resources were identified within the project site through the CHRIS records search, archival review, or NAHC SLF search or as a result of tribal consultation. As such, no TCRs, defined by PRC Section 5020.1(k), have been identified within areas that would be impacted by the proposed project.

The NAHC provided the City with a list of eight Native Americans who should be contacted pursuant to SB 18 and AB 52 because of their cultural affiliation to the project site and surrounding area. In compliance with AB 52, the City contacted all tribal representatives that have requested formal project notification on March 30, 2021. In compliance with SB 18, the City contacted all NAHC-listed traditionally geographically affiliated tribal representatives on March 30, 2021. One Native American Contact, Gabrieleño Band of Mission Indians-Kizh Nation, responded to the City's notification letter on April 5, 2021, and indicated that the project site is within the

Gabrieleño Band of Mission Indians-Kizh Nation ancestral territory and requested to engage in formal consultation. The City held a virtual meeting with the Gabrieleño Band of Mission Indians-Kizh Nation on May 20, 2021. During this meeting, the Gabrieleño Band of Mission Indians-Kizh Nation requested the geotechnical investigation prepared for the proposed project, as well as a copy of the SLF. In addition, the Gabrieleño Band of Mission Indians-Kizh asked the City to confirm that a CHRIS Records had been prepared for the proposed project. The City provided all requested data/information to the Gabrieleño Band of Mission Indians-Kizh Nation on May 21, 2021. In addition, the City provided the Gabrieleño Band of Mission Indians-Kizh Nation with a copy of the original iteration of the mitigation measures outlined in Section 4.5.6. On May 26, 2021, the City contacted Gabrieleño Band of Mission Indians-Kizh Nation by email asking if they had any questions or concerns and did not receive a response. On June 4, 2021, the City contacted Gabrieleño Band of Mission Indians-Kizh Nation by email again and provided the Gabrieleño Band of Mission Indians-Kizh Nation until June 10, 2021 to respond or the City would consider the consultation process officially closed. The Gabrieleño Band of Mission Indians-Kizh Nation responded by email on June 7, 2021 explaining they would provide further information as soon as they could. On June 9, 2021, the City responded by email basking that the Gabrieleño Band of Mission Indians-Kizh Nation consider the cultural mitigation measures previously provided. On July 8, 2021, the Tribe contacted the City by email to say they did not agree that the cultural mitigation measures provided were sufficient to TCRs and asked that the City utilize mitigation measures the Gabrieleño Band of Mission Indians-Kizh Nation provided in the same email. On July 14, 2021, the City provided the Gabrieleño Band of Mission Indians-Kizh Nation, by email, with TCR mitigation measures developed based on the mitigation measures the Gabrieleño Band of Mission Indians-Kizh Nation previously provided (provided in Section 4.18.6). On July 14, 2021 the Gabrieleño Band of Mission Indians-Kizh Nation contacted the City by email to say they agree with the mitigation measures provided on July 14, 2021 and asked that the Gabrieleño Band of Mission Indians-Kizh Nation be contacted prior to development. The City responded by email saying the City would keep the Gabrieleño Band of Mission Indians-Kizh Nation informed. On July 15, 2021, the City contacted the Gabrieleño Band of Mission Indians-Kizh Nation by email to inform the Gabrieleño Band of Mission Indians-Kizh Nation the consultation process is officially closed (Table 4.18-1). All records of correspondence related to AB 52 notification and any subsequent consultation are on file with the City and have been included in Confidential Appendix D in Appendix D2.

Table 4.18-1. Assembly Bill 52 and Senate Bill 18 Native American Tribal Consultation Results

Native American Tribal Representatives	Method and Date of Notification	Response to City Notification Letters	Consultation Date and Results
Gabrieleño/Tongva San Gabriel Band of Mission Indians; Anthony Morales, Chairperson	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Chief Anthony Morales	No response received	No consultation requested or held
Gabrieleño Band of Mission Indians - Kizh Nation (Kizh Nation); Andrew Salas, Chairperson	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Andrew Salas	Response received by the City on April 5, 2021 from Andrew Salas of the Gabrieleño Band of Mission Indians-Kizh Nation confirming location of proposed Project site is within his Tribe's ancestral territory and requested formal consultation.	May 20, 2021 - City held a virtual consultation meeting with the Gabrieleño Band of Mission Indians-Kizh Nation represented by Andrew Salas. Mr. Salas requested a copy of the geotechnical report, the NAHC SLF result and confirmation that a

Table 4.18-1. Assembly Bill 52 and Senate Bill 18 Native American Tribal Consultation Results

Native American Tribal Representatives	Method and Date of Notification	Response to City Notification Letters	Consultation Date and Results
			CHRIS records search had been conducted. The City provided all requested data to the Tribe on May 21, 2021 along with proposed cultural mitigation measures for the Tribe's review. Multiple communications between the City and the Tribe (documented above in detail) resulted in the development of a mitigation measure to address the potential impact to unknown TCRs. On July 14, 2021, the Tribe confirmed they agreed with the mitigation measures and on July 15, 2021, the City formally closed the consultation process.
Gabrieliño/Tongva Nation; Sandonne Goad, Chairperson	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Sandonne Goad	No response received	No consultation requested or held
Gabrieliño Tongva Indians of California Tribal Council; Robert Dorame, Chairperson	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Robert Dorame	No response received	No consultation requested or held
Gabrieliño-Tongva Tribe; Charles Alvarez	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Charles Alvarez	No response received	No consultation requested or held
Santa Rosa Band of Cahuilla Indians; Lovina Redner, Tribal Chair	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Lovina Redner	No response received	No consultation requested or held
Soboba Band of Luiseño Indians; Scott Cozart, Chairperson	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Scott Cozart	No response received	No consultation requested or held

Table 4.18-1. Assembly Bill 52 and Senate Bill 18 Native American Tribal Consultation Results

Native American Tribal Representatives	Method and Date of Notification	Response to City Notification Letters	Consultation Date and Results
Soboba Band of Luiseño Indians; Joseph Ontiveros, Cultural Resource Department	March 30, 2021, Letter sent via email and certified mailing Letter Memo emailed to Joseph Ontiveros	No response received	No consultation requested or held

Ground-disturbing activities associated with construction of the proposed project could result in the unanticipated discovery of previously uncovered TCRs. As such, impacts to previously undiscovered TCRs would be **potentially significant** (**Impact TCR-1**). To mitigate any potential impacts to TCRs resulting from ground-disturbing activities, one mitigation measure (**MM-TCR-1**) will be implemented**. MM-TCR-1** requires that a Native American monitor be present during activities interpreted as having the potential to encounter unknown TCR. Implementation of this measure would reduce potential impacts to TCRs to **less than significant.**

b. 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?

As discussed in Section 4.5, Cultural Resources, and in Appendix D2, the project site has been subject to consistent ground disturbance as a result of agricultural use of the site, site maintenance activities, and activities associated with the Mater Dolorosa Retreat Center and the former Monastery. Considering these factors, the potential for buried archaeological deposits, specifically TCRs within the project site, is considered to be relatively low, but possible. Ground disturbing activities associated with construction of the proposed project could result in the unanticipated discovery of previously uncovered TCRs. As such, impacts to previously undiscovered TCRs would be potentially significant (**Impact TCR-1**). To mitigate any potential impacts to TCRs resulting from ground disturbing activities, one mitigation measure **MM-TCR-1** shall be implemented. **MM-TCR** requires that a Native American monitor be present during activities interpreted as having the potential to encounter unknown TCRs and reducing impacts to TCRs to **less than significant**.

4.18.6 Mitigation Measures

The following mitigation measure would be implemented to reduce potentially significant impacts to previously uncovered TCRs **(Impact TCR-1)** associated with project construction.

MM-TCR-1 **Native American Monitoring.** Prior to the commencement of any ground disturbing activity at the Project site, the project applicant shall retain a Native American Monitor approved by the Gabrieleño Band of Mission Indians-Kizh Nation (Consulting Tribe on this project pursuant to Assembly Bill A52). A copy of the executed contract shall be submitted to the City of Sierra Madre Planning and Building Department prior to the issuance of any permit necessary to commence a ground-disturbing activity. The Tribal monitor will only be present on-site during the construction phases that involve initial ground-disturbing activities. Initial ground-disturbing activities is defined as initial mass grading and associated movement of sediments from their place of last deposition prior to commencement of the Project. (Initial ground disturbing activities does not

include site preparation, grubbing, clearing, potholing, surveying, auguring, or tree removals.) As it pertains to Native American monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by project-related construction.

The Tribal Monitor will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the qualified archaeologist has determined that all initial ground-disturbing activities on the Project Site (as defined above) are completed, or when the qualified archaeologist and Tribal Representatives/Monitor have indicated that all upcoming ground-disturbing activities at the Project Site have little to no potential for impacting tribal cultural resources (whichever defined threshold is met first). Upon discovery of any tribal cultural resources, construction activities shall cease in the immediate vicinity of the find and a buffer of 100 feet will be established where no ground disturbing work will be allowed to occur until the find can be assessed and if required, treated according to CEQA requirements. All tribal cultural resources unearthed by project activities shall be evaluated by the qualified archaeologist retained on-call and Tribal monitor approved by the Consulting Tribe. If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes. If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease within 100 feet of the find and suspected extent of human remains as determined by the qualified archaeologist retained on-call and Tribal monitor approved by the Consulting Tribe. The county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2). Work may continue on other parts of the Project Site (outside the 100-foot buffer) while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]).

4.18.7 Level of Significance After Mitigation

Implementation of **MM-TCR-1** would reduce potentially significant impacts to previously undiscovered TCR resources (**Impact TCR-1**) to a **less than significant.**

4.19 Utilities and Service Systems

This section describes the existing utilities conditions of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

4.19.1 Existing Conditions

Project Site and Vicinity

Water

The City of Sierra Madre (City) is the licensee and operator of its own water distribution system under the Sierra Madre Water Department (SMWD). The SMWD provides water to all of its residents and commercial uses totaling approximately 3,700 metered connections. The SMWD owns and maintains approximately 46 miles of water mains.

Water Supply

Raymond Groundwater Basin

The City's traditional potable water source is groundwater from the Raymond Groundwater Basin. The Raymond Groundwater Basin is located in Los Angeles County about 10 miles north-easterly of downtown Los Angeles. The Raymond Groundwater Basin is a wedge in the northwesterly portion of the San Gabriel Valley and is bounded on the north by the San Gabriel Mountains, on the west by the San Rafael Hills and is separated from the Main San Gabriel Groundwater Basin on the southeast by the Raymond Fault. The Raymond Groundwater Basin is divided into the Eastern Unit, which is the Santa Anita Sub-area, and the Western Unit, which is the Pasadena Sub-area and the Monk Hill Sub-area Basin. The project site is located within the Santa Anita Sub-area. The Decreed Right of 1955 provided the City with water rights to 1,764 acre feet per year (AFY) from the Santa Anita Sub-area. The City also has the right to obtain credit for "salvage water." Salvage water is surface water percolated into the Santa Anita Sub-area minus losses for natural percolation and subsurface outflow. Salvage water credits allow the City to (annually) extract more than 1,764.0 acre-feet (AF) from the Santa Anita-Sub area. However, due to past multiple dry-year conditions, the Raymond Basin Management Board (RBMB) implemented a "500-foot" level limitation for all Decreed Rights to the Santa Anita Sub-area in 2013. As a result, the City's adjusted right to the Santa Anita Sub-area was limited to 940 AFY. In October 2015, after five years of unprecedented drought and insufficient groundwater replenishment, the RBMB limited the amount of groundwater which the City is allowed to produce each year and authorized the use of imported water for spreading on behalf of the City. Metropolitan Water District of Southern California (MWD) entered into an agreement with the City and the San Gabriel Valley Municipal Water District (SGVMWD) to deliver up to 2,500 AFY of treated, imported water for spreading within the Santa Anita Sub-area. A new imported water connection was constructed at the Sierra Madre Spreading Grounds for the purposes of spreading to allow for additional groundwater by the City. Over the past five years, MWD has delivered 1,036 AFY to 2,044 AFY, with an average of 1,550 AFY, for spreading on behalf of the City (City of Sierra Madre 2021).

Due to the "500-foot" level limitation that is in effect, the City's water rights to the Raymond Groundwater Basin are currently based on the adjusted rights to the Santa Anita Sub-area of 940.0 AFY plus any imported water spread at the Sierra Madre Spreading Grounds. Over the past five years, the City has produced 1,023 AFY to 2,387 AFY, with an average of 1,967 AFY from the Raymond Groundwater Basin. However, with continued use of imported water,

tunnel water, and any other viable sources for groundwater recharge, the City can expect the "500-foot rule" restriction to be lifted (City of Sierra Madre 2021).

Tunnel Water

The City owns two tunnels (East and West tunnels) located in the Little Santa Anita Canyon, located in the mountains above the City. These tunnels act as horizontal wells and produce water by gravity flow (City of Sierra Madre 2021). The City's wells and tunnels have traditionally supplied water to the City for the last 90 years. Currently, water is only taken directly into the City's distribution system from the West Tunnel, which has a maximum capacity of approximately 500 gallons per minute. The East Tunnel water is currently inactive due to the influence of surface water on its north branch. Since the production of water from these tunnels is dependent on the hydrologic cycle, production rates decline after several consecutive years of dry conditions. Thus, in multiple dry years, these tunnels would not provide a significant source of supply. Over the past five years, the City has produced 4 AFY to 9 AFY, with an average of 6 AFY from the West Tunnel (City of Sierra Madre 2021).

Main San Gabriel Groundwater Basin

The Main San Gabriel Groundwater Basin is a large groundwater basin replenished by stream runoff from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, subsurface inflow from Raymond Groundwater Basin and Puente Basin, and by return flow from water applied for overlying uses. Additionally, the Main San Gabriel Groundwater Basin is replenished with imported water. The Main San Gabriel Groundwater Basin serves as a natural storage reservoir, transmission system and filtering medium for wells constructed therein. The City produces groundwater from four production wells (Wells No. 3, No. 4, No. 5, and No. 6). There are three municipal wholesale water districts overlying and/or partially overlying the Main San Gabriel Groundwater Basin. The three districts are Upper District, SGVMWD, and Three Valleys Municipal Water District (TVMWD).

The City is a party to the Main Basin Judgment, which means the City can pump from the Main San Gabriel Groundwater Basin. The Main Basin Judgment does not restrict the quantity of groundwater that can be produced, but provides for a Replacement Water assessment for production in excess of water rights. Historically, the Main San Gabriel Groundwater Basin did not have wells. However, the City has proposed constructing a new well jointly with the City of Arcadia. The Main San Gabriel Groundwater Basin has been adjudicated and management of the local water resources within the Main San Gabriel Groundwater Basin is based on that adjudication. Management of the water resources in the Main San Gabriel Groundwater Basin is based upon Watermaster services under two Court Judgments: San Gabriel River Master and Main Basin Watermaster. Under the Main Basin Adjudication, the City does not have pumping rights but can pump from the Main San Gabriel Basin. Although there is no limit on the quantity of water that may be extracted by parties to the Main Basin Adjudication, including the City, groundwater production in excess of a Party's water right, or its proportional share (pumper's share) of the Operating Safe Yield, requires purchase of untreated imported water to recharge the Main San Gabriel Basin. The City plans to obtain groundwater produced from the Main San Gabriel Basin and delivered through an inter-connecting pipeline with the City of Arcadia. If the City obtains any water from the Main San Gabriel Groundwater Basin, replacement water may be purchased from SGVMWD to recharge the Main San Gabriel Groundwater Basin. Any water pumped from Main San Gabriel Groundwater Basin wells on behalf of the City will be counted toward the City. Over the past five years, the City has not obtained any groundwater from the Main San Gabriel Groundwater Basin (through the City of Arcadia) (City of Sierra Madre 2021).

San Gabriel Valley Municipal Water District and Metropolitan Water District of Southern California

The City is a member of the SGVMD, a wholesale water supplier. The City can purchase treated, imported water from SGVMD through the MWD. SGVMWD coordinated with MWD to construct an emergency connection in 2012 for the City to received treated imported water, which initially was delivered to the City's distribution system. The capacity of the connection is approximately 2,500 gallons per minute (gpm). Beginning October 2013, well production was reduced by 95 percent due to low groundwater levels of the Raymond Groundwater Basin. Beginning in 2015, the City began delivering the treated imported water to the Sierra Madre Spreading Grounds for the purposes of groundwater spreading. The imported water spread is used as a credit to supplement the City's water production rights in the Raymond Groundwater Basin (City of Sierra Madre 2021).

MWD entered into an agreement with the City and SGVMWD to deliver treated, imported water. Pursuant to this agreement, SGVMWD provides a portion of its annual State Water Project (SWP) allocation which MWD then wheels to the City.

Water Demand

Historically, SMWD has relied on all of its sources, wells, and tunnels, to meet City demands. To ensure the efficient use and supply of groundwater in the Raymond Groundwater Basin, water resources is managed by the Raymond Basin Judgment (RBJ). The RBJ is administered by the RBMB and is comprised of various participating parties, including the City, to manage and preserve groundwater levels of the Raymond Groundwater Basin. Under provisions of the 1984 RBJ (Section VI [3]), pumping is restricted when groundwater levels in the Santa Anita Sub-area drop below 500 feet above mean sea level. Significant threats on the City's water supply include increase in population, overdevelopment, and on-going drought conditions. The drought has driven home the point that Southern California is an arid region which does not have an adequate local water supply to meet current water demands, and that supplies of imported water cannot be counted upon in dry periods or in the event of a disaster (City of Sierra Madre 2015).

In July 2021, the City of Sierra Madre adopted the 2020 Urban Water Management Plan (UWMP) (City of Sierra Madre 2021). The City's 2020 UWMP ensures that water supplies are being planned to meet future growth (City of Sierra Madre 2015). Table 4.19-1, Normal Water Year Supply and Demand Comparison, Table 4.19-2, Single Dry Year Supply and Demand Comparison, and Table 4.19-3, Multiple Dry Years Supply and Demand Comparison represent the water supply and demand projections for the years 2025 through 2045.

Table 4.19-1. Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals	2,487	2,499	2,512	2,522	2,533
Demand Totals	2,487	2,499	2,512	2,522	2,533
Difference	0	0	0	0	0

Source: *City of Sierra Madre 2021*
Notes: Supply and Demand represented in acre-feet per year (AFY)

Table 4.19-2. Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals	2,331	2,342	2,353	2,364	2,375
Demand Totals	2,331	2,342	2,353	2,364	2,375

Table 4.19-2. Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Difference	0	0	0	0	0

Source: *City of Sierra Madre 2021*
Notes: Supply and Demand represented in acre-feet per year (AFY)

Table 4.19-3. Multiple Dry Year Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply Totals	2,793	2,806	2,819	2,833	2,846
	Demand Totals	2,793	2,806	2,819	2,833	2,846
	Difference	0	0	0	0	0
Second Year	Supply Totals	2,954	2,968	2,982	2,996	3,010
	Demand Totals	2,954	2,968	2,982	2,996	3,010
	Difference	0	0	0	0	0
Third Year	Supply Totals	2,599	2,611	2,623	2,635	2,647
	Demand Totals	2,599	2,611	2,623	2,635	2,647
	Difference	0	0	0	0	0
Fourth Year	Supply Totals	2,210	2,220	2,230	2,241	2,251
	Demand Totals	2,210	2,220	2,230	2,241	2,251
	Difference	0	0	0	0	0
Fifth Year	Supply Totals	2,299	2,310	2,320	2,331	2,342
	Demand Totals	2,299	2,310	2,320	2,331	2,342
	Difference	0	0	0	0	0

Source: *City of Sierra Madre 2021*
Notes: Supply and Demand represented in acre-feet per year (AFY)

As depicted from the Tables 4.19-1 through 4.19-3, the City can expect to meet future demands for normal year, single dry years, and five consecutive year drought periods from 2025 through 2045.

Water Conservation

Water conservation can be considered an additional source of potable water because it frees up water that otherwise might be used inefficiently. In light of drought conditions, the City has needed to review and update its "Mandatory Water Conservation Plan" on several occasions during 2013 and 2014. The City has also adopted Water Efficient Landscape and Low Impact Development Ordinances to require water conservation efforts associated with development and redevelopment.

Sewer/Wastewater

The sewer collection system is owned by the City and is managed, operated, and maintained by the City's Public Works Department. The 32-mile sewer pipeline system that serves the City operates on gravity and intersects Los Angeles County Sanitation District (LACSD) trunk pipelines within the City. The City sewer main lines are 8 inches in diameter and are found below most City streets (City of Sierra Madre 2015).

LACSD provides, under contract with the City, the treatment of wastewater and the ultimate disposal of effluent and solids in compliance with the waste discharge requirements set by the California Regional Water Quality Control Board (RWQCB). The City currently provides sewer service to approximately 90% of the City's residents and commercial establishments. The balance is served by private septic tank systems or by County-owned and operated trunk mains in East Orange Grove Avenue, and South Baldwin Avenue. About 93% of flows form these local sewers discharge into LACSD facilities for conveyance, treatment, and disposal at the San Jose Creek Water Reclamation Plant (SJCWRP) and the Whittier Narrows Water Reclamation Plant (WNWRP). The remaining 7% of total sewage generated within the City passes through the adjacent City of Arcadia sewer system and is conveyed to LACSD facilities. The SJCWRP plant serves a population of approximately 1 million people, largely composed of a residential population (City of Sierra Madre 2015).

The City has prepared and updated a Sewer System Management Plan (SSMP). This requirement by the State Water Resources Control Board was accomplished in 2006 and updated in 2014. The SSMP provides specific actions to respond to spills, provides for an analysis on system capacities and areas that are subject to leaks or breaks (City of Sierra Madre 2015).

The City does not maintain individual sewer laterals, either on private property or within street rights-of way. Maintenance of those portions of the sewer system is considered the responsibility of the individual property owner served by the lateral (City of Sierra Madre 2015).

Solid Waste

The City has an exclusive franchise contract with Athens Services to collect all waste within the City. Refuse collection is conducted once a week for most residential and commercial customers. Some commercial and multi-unit properties may have service more frequently if needed. For residential customers, Athens Services provides a three-can system to separate waste from recyclable material and organic material (City of Sierra Madre 2015).

The City is a member of the Scholl Canyon Wasteshed and much of the material collected by Athens Service is taken to the Scholl Canyon Landfill. Waste was previously taken to Puente Hills Landfill but after closure of that facility, waste is now taken to the Scholl Canyon Landfill (City of Sierra Madre 2015).

Stormwater Drainage

The City owns and maintains approximately 9.62 miles of storm drains. Seven debris basins are located within the City. Six of the seven debris basins are owned and maintained by the Los Angeles County Department of Public Works (LACDPW). The basins are located in the northern portion of the City in the hillside area, where the project site is located. LACDPW also maintains the Sierra Madre Dam located at the north end of Woodland Drive (City of Sierra Madre 2015).

Electric Power, Natural Gas, and Telecommunication Facilities

Electrical Power

Electrical service to the City is provided by Southern California Edison Company (SCE). Existing SCE facilities presently provide adequate electrical service throughout the City. The majority of SCE facilities in the City are overhead, consisting of wood power poles, overhead conductors, transformers, and various other types of pole-mounted equipment. Some customers have individual underground-fed services, such as a customer being served from a pad mounted transformer, or a residential customer who has opted to have their service installed

underground. According to SCE, no deficiencies or inefficiencies currently exist and there are no plans by SCE to expand electrical facilities at this time. SCE regularly reviews its grid system and infrastructure for reliability of service to its customers (City of Sierra Madre 2015).

Natural Gas

The City's natural gas needs are provided by Southern California Gas Company (SoCalGas). SoCalGas does not have any natural gas building facilities within the City's boundaries and no deficiencies or inefficiencies currently exist. Additionally, there are no plans by SoCalGas to expand natural gas facilities at this time (City of Sierra Madre 2015).

Telecommunication Facilities

Phone service to the project site would be provided by Frontier or Spectrum. Additionally, a Charter cable runs from the backyards of existing homes on the north and east sides of Sierra Keys Drive up Carter Avenue to the Mater Dolorosa Retreat Center (Dudek 2020). Furthermore, the City's General Plan states that Time Warner Cable can provide cable television to the project site (City of Sierra Madre 2015).

4.19.2 Relevant Plans, Policies, and Ordinances

Federal

Integrated Waste Management Act of 1989 (AB 341)

The Integrated Waste Management Act of 1989, or Assembly Bill (AB) 341, requires each city, county, and regional agency to develop a source reduction and recycling element of an integrated waste management plan that includes source reduction, recycling, and composting components. A minimum of a 50% diversion rate of all solid waste from landfill disposal or transformation by January 1, 2000, was required and met. The current policy goal of the state is no less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020.

State

Urban Water Management Planning Act

In 1983, the Legislature enacted the Urban Water Management Planning Act (UWMP Act) (California Water Code, Sections 10610–10656), which requires specified urban water suppliers within the state to prepare an Urban Water Management Plan (UWMP) and update it every 5 years. State and local agencies and the public frequently use UWMPs to determine if agencies are planning adequately to reliably meet water demands in various service areas. As such, UWMPs serve as an important element in documenting water supply availability and reliability for purposes of compliance with state laws, Senate Bill (SB) 610 and SB 221, which link water supply sufficiency to large land-use development project approvals. Urban water suppliers also must prepare UWMPs, pursuant to the UWMP Act, to be eligible for state funding and drought assistance.

The UWMP provides information on water usage, water supply sources, and water reliability planning within a specified water agency service area. It also may provide implementation schedules to meet projected demands over the planning horizon; a description of opportunities for new development of desalinated water; groundwater information (where groundwater is identified as an existing or planned water source); description of water quality over the planning horizon; and identification of water management tools that maximize local resources and

minimize imported water supplies. Additionally, the UWMP evaluates the reliability of water supplies within the specified service area. This includes a water supply reliability assessment, water shortage contingency plan, and development of a plan in case of an interruption of water supplies.

Senate Bills 610 and 221

On January 1, 2002, SB 610 took effect. SB 610, which was codified in the Water Code beginning with Section 10910, requires the preparation of a water supply assessment for projects within cities and counties that propose to construct 500 or more residential units or the equivalent. SB 610 stipulates that when environmental review of certain development projects is required, the water agency that is to serve the development must complete the water supply assessment to evaluate water supplies that are or will be available during normal, single-dry, and multiple-dry years during a 20-year projection to meet existing and planned future demands, including the demand associated with a project.

SB 221, enacted in 2001 and codified in the Water Code, requires a city, county, or local agency to include a condition to any tentative subdivision map that a sufficient water supply shall be available to serve the subdivision. The term "sufficient water supply" is defined as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that would meet the proposed subdivision project's projected water demand, in addition to existing and planned future water uses, including agricultural and industrial uses, within the specified service area. SB 221 further requires any verification of "projected" water supplies to be based on entitlement contracts, capital outlay programs and regulatory permits and approvals.

Title 14: Natural Resources – Division 7

Title 24 of the California Code of Regulations regarding Natural Resources sets minimum standards for solid waste handling and disposal, including specific regulations regarding waste tire storage and disposal, hazardous waste disposal facilities, construction and demolition and inert debris transfer/processing, construction and demolition waste and inert debris disposal, transfer/processing operations and facilities, siting and design, operation standards, record keeping, and additional operating requirements for facilities. Additional guidance and requirements for compostable materials handling operations and facilities, asbestos handling and disposal, resource conservation programs, farm and ranch solid waste cleanup and abatement, used oil recycling program, electronic waste recovery and recycling, solid waste cleanup among others are also addressed in Title 14.

Title 27: Environmental Protection – Division 2, Solid Waste

Title 27 of the California Code of Regulations regarding Environmental Protection and Solid Waste set the criteria for all waste management units, facilities, and disposal sites including regulations of the California Integrated Waste Management Board and State Water Resources Control Board. Waste classification, siting, construction standards, water quality monitoring and response programs, operating criteria, daily and immediate cover, handling and equipment, controls, gas monitoring and control, closure and post-closure standards, and financial assurances are all aspects covered in Title 27.

Assembly Bill 939 and Assembly Bill 341

In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet

diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020 and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020.

Executive Order B-29-15

In response to the ongoing drought in California, Executive Order (EO) B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Local

Household Hazardous Waste Element

Resolution 98-06, adopted in December of 1997, created the City's Household Hazardous Waste Element. This document outlined strategies and planning to eliminate household hazardous wastes from the City's waste stream. The City's residents are provided with opportunities to safely dispose of common household goods that are not allowed into the traditional waste stream. Items such as light bulbs, batteries, used oil, electronic waste, and certain solvents and cleaners are dangerous to the environment and prohibited from landfills. The City works closely with the County of Los Angeles to create and maintain programs to collect and safely dispose of such waste. Once a year, the City hosts a County-sponsored Household Hazardous Waste Roundup at the Mariposa Parking Lot. The event accepts the hazardous waste at no charge to the resident. A calendar of such events that are being hosted by nearby cities is maintained and available to residents, and the County's website is also a source for such reference.

Urban Water Management Plans

The Urban Water Management Plan (UWMP) Act requires that each urban water supplier providing water for municipal purposes, either to more than 3,000 customers, or more than 3,000 AFY, must prepare, adopt, and update a UWMP at least once every 5 years on or before December 31, in years ending in 5 and 0. The intent of an UWMP is to present information on water supply, water usage/demand, recycled water, and water use efficiency programs in a respective water district's service area. The UWMP also serves as a valuable resource for planners and policy makers over a 25-year time frame. As such, the City's 2020 UWMP ensures that water supplies are being planned to meet future growth. UWMPs are developed to manage the uncertainties and variability of multiple supply sources and demands over the long term (City of Sierra Madre 2021). As discussed above, the City adopted its 2020 UWMP in July 2021.

City of Sierra Madre General Plan

The City's General Plan discusses the City's owned and operated municipal utility systems. The General Plan recognizes that the City shall achieve public services goals through adequate and safe public infrastructure (utility systems) that support land uses. The General Plan includes objectives and policies in the Community Services Element that require the provision of adequate utility systems to meet demands of new and existing development (City of Sierra Madre 2015). The following goals, objectives, and policies from the City's General Plan are relevant to the project. The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Land Use Goal 4: Ensure that development is done to maximize water conservation practices to reduce and minimize the impact on the City's local water supply and the ability to serve its water customers.

Land Use Goal 5: Institute conservation measures so that the demand for water matches the City's local supply.

Policy L1.6: Require that new residential development, substantial remodeling and additions comply with all adopted water conservation measures that reduce and minimize the impact on the City's water supply and its ability to serve its water customers.

Objective L4: Mitigating the impacts of new development on the City's open space, trees, infrastructure, water, transit services, the character of existing development, and other public needs.

Policy L4. 3: Ensure that new development and the expansion of existing uses incorporate water conservation measures that reduce and minimize the impact on the City's water supply and its ability to serve its customers.

Policy L8.3: Consider a water impact fee to apply to new residential dwelling units and additions to existing development that increase water consumption, to fund water fixture retrofits of existing homes and other water conservation measures.

Water Resources Goal 3. Growth that is linked to the availability of water.

Water Resources Goal 4. Use of local sources of groundwater rather than imported water.

Policy Hz2.4: Consider water availability in terms of quantity and water pressure for safety purposes when considering the size and location of new residential construction.

Objective C31: Providing adequate water, wastewater/sewer, storm drainage, electrical, and telecommunications systems to meet the demands of new and existing development.

Policy C31.1: Provide for storm drainage improvements where existing systems are deficient.

Policy C31.3: Require that new development be contingent upon the ability to be served by adequate sanitation collection and treatment, water, electrical and natural gas energy, telecommunication, storm drainage, and other supporting infrastructure.

Policy C31.4: Upgrade areas that are deficient and maintain lighting fixtures in good working condition.

Policy C31.5: Require that new development capture for percolation on site the maximum practical amount of storm water.

Sewer System Management Plan

The City's SSMP was prepared in compliance with the formal and executive orders issued by the State Water Resources Control Board. Those orders require every owner and operator of publicly owned sewer systems to develop and implement a system specific SSMP. The SSMP sets forth goals and actions to be followed, and guidelines for various activities involved in managing, operating, maintaining, replacing, and expanding the sewer system (City of Sierra Madre 2014). The goals of the SSMP include the following:

- City wastewater collection system facilities are properly operated, maintained, and managed to reduce frequency and severity of sanitary sewer overflows (SSO) and their potential impacts on public health, safety, and on the environment; and
- When SSO occurs, prompt action is taken to identify, contain, remove the cause and then to promptly report the event to appropriate regulatory authorities and that the public is adequately and timely notified; and
- All SSO and system deficiencies and remedial actions taken are well documented; and
- City sewer system operations, employees, contractors, responders, or other agents are adequately trained and equipped to effectively address an SSO event; and
- City sewer system is properly designed, constructed, and funded to provide adequate capacity to convey base flows and peak flows while meeting or exceeding applicable regulations, laws, and the generally acceptable practices relative to sanitary sewer system operations and maintenance.

Sierra Madre Municipal Code

Sewer Connection

Sierra Madre Municipal Code Section 13.12.250, states that for each lot, a 6-inch internal diameter house connection sewer shall be provided in the street, straight in alignment and grade between the main-line sewer and the property line, with minimum depths as required by Section 13.12.170, and at right angles to the mainline sewer whenever possible. An exception, includes house connection sewers constructed in the street under the provisions of Chapter 15.20, or house connection sewers provided in the street for lots restricted to single-family residential use under the provisions of the Title 17 of this code may have an internal diameter of 4 inches.

Waste Management Plan

All projects within the City, which the City reasonably determines will cost $50,000 or more to construct shall be subject to the Waste Management Plan (WMP) requirement of Section 8.13.040. Per Section 8.13.040 of the Sierra Madre Municipal Code, a completed WMP shall indicate the estimated volume or weight of construction and demolition material or debris, by material type to be generated; maximum volume or weight of such materials that can be diverted via reuse or recycling; the vendor or facility that the construction and demolition applicant proposes to use to collect or receive that material; the estimated volume or weight of construction and demolition materials that will be sent to a disposal site; and the estimated volume or weight of inert materials to be sent to an inert disposal facility.

Mandatory Water Conservation Plan

The purpose of the Mandatory Water Conservation Plan is to minimize the effects of a water shortage to the water customers of the City, to comply with California Water Code Sections 10608(a) and (b), and to significantly reduce the delivery and consumption of water, thereby extending the period of available water to match the water which may be supplied or delivered to the distribution system of the City.

Low-Impact Development Plan

The provisions of Chapter 15.58 contain requirements for construction activities and facility operations of development and redevelopment projects to comply with the current "municipal NPDES permit," lessen the water quality impacts of development, and integrate low-impact-development design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use. Low-impact development shall be inclusive of the Los Angeles Countywide Standard Urban Stormwater Mitigation Plan requirements.

Water Efficient Landscape Ordinance

Chapter 15.60 of the Sierra Madre Municipal Code defines the Water Efficient Landscape Ordinance. The City's City Council finds that the Water Efficient Landscape Ordinance should at least be effective in conserving water as the model local water efficient landscape ordinance adopted by the California Department of Water Resources pursuant to Government Code Section 65595. This ordinance shall implement goals related to the use and preservation of water including to assure beneficial, efficient, and responsible use for all water users within the City.

4.19.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to utilities and service systems are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to utilities and service systems would occur if the project would:

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.
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
3. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
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.
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

4.19.4 Project Design Features

The following project design feature (PDF) would be implemented as part of the proposed project and would be applicable to utilities and service systems:

PDF-UTL-1 Prior to issuance of a building unit, the project applicant will provide funds to the City to purchase supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD) in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period. This purchase would be in addition to the City's existing agreement with SGVMWD providing for the purchase of supplemental imported water.

4.19.5 Impacts Analysis

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

As discussed in Section 4.19.1, Existing Conditions, the City is the licensee and operator of its own water distribution system under the SMWD. The SMWD owns and maintains approximately 46 miles of water mains. The City receives water supplies from groundwater, imported water, and tunnel water. Refer to Section 4.19.1 for further details regarding water supply in the City. As mentioned in this section, water supply to the City would primarily be provided through imported water until the Raymond Groundwater Basin returns to a sufficient level of groundwater.

Based on the City's Comprehensive Water and Wastewater Cost of Service Study, on average, a resident in the City utilizes approximately 55 gallons of water per day for indoor water use, which equates to 0.000168789 AF of water use per resident (see Appendix J, Comprehensive Water and Wastewater Cost of Service Study). As discussed in Section 4.14, Population and Housing, Southern California Association of Governments (SCAG's) Connect SoCal Program EIR, the average household size in the SCAG region was 3.2 persons per household in 2018 (SCAG 2019). Using the 2018 regional average as a guide, 3.2 persons per household for the project's proposed 42 residential units could generate a population increase of approximately 134 persons. Using these numbers, the proposed project would result in an increased demand of approximately 0.023 AF per day for the 134 residents associated with the project, or a total of 8.26 AFY of indoor water use. In addition, the proposed project's anticipated outdoor water use was calculated using the Maximum Applied Water Allowance (MAWA), which represents the maximum potential outdoor water use permitted by low impact design standards set by the California Building Code. MAWA uses average lot sizes, home sizes, and driveway sizes to calculate water usage associated with outdoor areas, and accounts for water evaporation rates. Per MAWA calculations performed by GroundLevel Landscape Architecture, Inc, the outdoor water use associated with the project would be approximately 3.65 AFY (GroundLevel Landscape Architecture, Inc 2021). Therefore, the proposed project would result in an increased water demand of approximately 11.91 AFY (8.26 AFY associated with indoor water use and 3.65 AFY associated with outdoor water use).

Tables 4.19-1 through 4.19-3 show that the City can expect to meet future demands for normal year and single dry years and five consecutive year drought periods from 2025 through 2045. Per Table 3.19-3, the SMWD's water demands for Years 2040 and 2045 during multiple dry years (fifth year)[1] would be 2,331 AFY and 2,342 AFY, respectively. As estimated above, the project would consume approximately 11.91 AF of water per year of water use (8.26 AF of water per year of indoor water use and 3.65 AF per year for outdoor water use). Therefore, estimated water consumption of the proposed project would result in approximately 0.51% of SMWD's projected water

[1] Multiple dry year (fifth year) demand projections were chosen to provide a conservative analysis.

demand for both 2040 and 2045, during a fifth year of a multiple dry year. Therefore, SMWD would have sufficient available supply to meet the water demand associated with the proposed project.

In addition, the project site would be developed in compliance with the California Green Building Code (which implements water efficiency standards for appliances and fixtures), which would further reduce project water usage. Further, to achieve a net-zero impact on local water supplies, the project Applicant would provide funds to the City to increase the City's water supply through the purchase of additional supplemental water from the SGVMWD. The amount of supplemental water purchased from the SGVMWD would be equal to all anticipated indoor and outdoor water demands for the proposed residential units over a 50-year period (see project design feature **[PDF]-UTL-1** in Sections 3.3.13 and 4.19.4). This purchase of additional supplemental water would offset the demand placed on existing supplies and would be in addition to the City's existing agreement with SGVMWD, which allows the City to purchase up to 2,500 AFY of supplemental water from SGVMWD. Therefore, this additional water supply has been accounted for in SGVMWD's UWMP. The additional supplemental water procured by the City as a result of the project would be stored in the Main San Gabriel Groundwater Basin and would be available to serve the public, as needed.

As shown in Figure 3-8, Proposed Water System, in Chapter 3, Project Description, of this EIR, the potable water delivery system would consist of a network of water mainlines, to be located within planned roadways. The existing 8-inch water main in the eastern portion of the project site would be removed and reconstructed as a 12-inch water main within Carter Avenue. The existing 8-inch sewer at the southwest corner of the project site would be removed. Additional 8-inch water mains are proposed within the other planned roadways (North Sunnyside Avenue extension and A, B and C Streets) and would distribute the potable water for connection to laterals located on individual lots. The proposed water mainlines would join the existing water mainlines at North Sunnyside Avenue and Carter Avenue at Lima Street, located approximately 670 feet east of the site, and will tie into the existing Oak Crest transmission main. These improvements would serve the proposed project only and occur within the boundaries of the project site. Therefore, these water improvements would not require or result in the relocation or construction of new or expanded water. In addition, as discussed above, the proposed project would not substantially increase demand of the City's water supply such that relocation or construction of new or expanded water supply facilities would be needed. Therefore, impacts would be **less than significant.**

Sewer/Wastewater

The sewer collection system is owned by the City and is managed, operated, and maintained by the City's Public Works Department. The 32-mile sewer pipeline system operates on gravity and intersects LACSD trunk pipelines within the City. The City sewer main lines are 8 inches in diameter and are found below most City streets. Figure 3-9, Proposed Wastewater System, in Chapter 3 depicts the on-site sewer system to serve the project. As shown in Figure 3-9, the proposed sewer system would consist of a network of 8-inch sewer mainlines that would be constructed within planned roadways. The proposed sewer mainlines would collect the sewage from laterals located on individual lots. The existing Mater Dolorosa Retreat Center sewer line on the project site would be relocated to be within Carter Avenue. Therefore, with implementation of wastewater facilities, the project would provide adequate wastewater facilities to serve the proposed project.

As discussed in Section 4.19.2, Relevant Plans, Policies, and Ordinances, about 93% of flows form these local sewers discharge into LACSD facilities for conveyance, treatment, and disposal at the San SJCWRP and the WNWRP. The remaining 7% of total sewage generated within the City passes through the adjacent City of Arcadia sewer system and is conveyed to LACSD facilities. Wastewater produced by development allowed under the project would be treated at SJCWRP. SJCWRP currently has a treatment capacity of about 100 million gallons per day (MGD). Based on CalEEMod generation rates, development allowed under the proposed project would generate

approximately 2.74 MGY of wastewater (Appendix B). Thus, wastewater generated by the project annually would be minimal in relation to the SJCWRP's daily treatment capacity. The SJWRP treatment level is coagulation, filtration, and disinfection tertiary effluent. The SJCWRP has room for an expansion of an additional 25 MGD, although there is no schedule for such an expansion. Regardless of the future expansion, the existing sewer collection system and wastewater system would be able to adequately support the project. Therefore, impacts would be **less than significant.**

Stormwater Drainage

Hydrology is discussed in detail in Section 4.10, Hydrology and Water Quality, of this EIR. Development allowed under the proposed project would alter the existing drainage of the project site by introducing impervious area to the site. More specifically, the project would introduce 42 detached single-family residential units and approximately 3.04-acre dedicated neighborhood park, within the 17.30-acre project site, resulting in the addition of more impervious area to the site, which would result in more surface runoff. However, as part of project site improvements, the project would include development of two storm drain networks, in order to properly convey flows from the western and eastern portions of the site (see Figure 3-7, Proposed Drainage Plan, in Chapter 3). As discussed in Chapter 3 and Section 4.10, Hydrology and Water Quality, the project would involve removal of portions of the existing 36-inch-diameter pipe within the western portions of the site, which would be reconstructed under the realigned extension of North Sunnyside Avenue and would connect with a proposed 36-inch RCP, to be located at North Sunnyside Avenue, between Street A and Street B. Additionally, the proposed western storm drain network would include development of two 18-inch RCP lateral connections at the southern end of the project site; two onsite catch basins within the southern end of North Sunnyside Avenue, to capture runoff generated from the western portion of the project site; and two additional catch basins, to be located directly to the northeast of the project site, within the existing Carter Avenue, to capture offsite flows before runoff enters the project site via the North Sunnyside Avenue extension. The western storm drain network would tie in with an existing 36-inch storm drain in North Sunnyside Avenue, at the southwest portion of the site and ultimately conveys runoff to Arcadia Wash.

The second storm drain network would be located on the eastern portion of the site and would be composed of 18-inch and 24-inch RCPs. Streets A, B, and C would include two catch basins each, and would each capture and convey surface runoff to the east. The second storm drain network would extent along Carter Avenue and would also convey surface runoff captured by two catch basins, to be located directly to the northeast of the project site, within the Carter Avenue (see Figure 3-7). A 24-inch RCP would be located in the southeastern portion of the project site and would run in the east to west direction into the proposed retention gallery, within the proposed park. The proposed 63,500-cubic-foot retention storage gallery would consist of approximately 2,400 linear feet of 60-inch diameter perforated pipe surrounded by gravel bed. The retention storage gallery would be approximately 24 inches below ground and would promote water quality treatment through infiltration. Stormwater that is not retained in the underground storage gallery retention system or infiltrated into the ground would be routed to the southeast corner of the proposed park and exit to Crestvale Drive via a 24-inch surface culvert. Flows would then be conveyed via the MS4 to the receiving waters of Arcadia Wash, an open concrete lined channel located approximately 1 mile southeast of the project site. Therefore, through improvements of on-site stormwater drainage facilities, the project would not result in relocation or construction of new or expanded stormwater drainage facilities. Impacts are **less than significant.**

Electric Power, Natural Gas, and Telecommunications Facilities

Dry utilities, such as electric, natural gas, and telecommunication infrastructure would be required to be installed to serve the proposed project. These dry utilities will be located within underground conduits in the public or private

street corridors/rights-of-way, within the project site, in general conformance with the phasing of the Specific Plan. The project would include electric, gas, and telecommunication connections within North Sunnyside Avenue and Carter Avenue. The proposed project would be served by Southern California Edison for electricity, Southern California Gas Company for natural gas, and Charter and Frontier for telecommunication services (Dudek 2020). Prior to and during the final infrastructure/improvement plan stages, consultation with all appropriate utilities to determine the extent of the dry utilities needed to serve the project will be required prior to and during the final infrastructure/improvement plan stages. Therefore, impacts would be **less than significant.**

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?

As discussed under Threshold 1, above, Tables 4.19-1 through 4.19-3 show that the City can expect to meet future demands for normal year, single dry years, and five consecutive drought years from 2025 through 2045. Per Table 3.19-3, the SMWD's water demands for Years 2040 and 2045 during multiple dry years (fifth year)[2] would be 2,331 AF per day and 2,342 AF per day, respectively. The project would consume approximately 11.91 AF of water per year of water use (8.26 AF of water per year of indoor water use and 3.65 AF per year for outdoor water use)). Therefore, estimated water consumption of the proposed project would result in approximately 0.51% of SMWD's projected water demand for both 2040 and 2045, during a fifth year of a multiple dry year. Therefore, even during multiple dry years, SMWD would have sufficient available supplies to meet the water demand associated with the proposed project.

In addition, the project site would be developed in compliance with the California Green Building Code (which implements water efficiency standards for appliances and fixtures), which would further reduce project water usage. Further, to achieve a net-zero impact on local water supplies, the project Applicant will provide funds to the City to the project Applicant will provide funds to the City to increase the City's water supply through the purchase of additional supplemental water from the SGVMWD. The amount of supplemental water purchased from the SGVMWD would be equal to all anticipated indoor and outdoor water demands for the proposed residential units over a 50-year period (see **PDF-UTL-1** in Sections 3.3.13 and 4.19.4). This purchase of additional supplemental water would offset the demand placed on existing supplies and would be in addition to the City's existing agreement with SGVMWD, which allows the City to purchase up to 2,500 AFY of supplemental water from SGVMWD. The additional supplemental water procured by the City as a result of the project would be stored in the Main San Gabriel Groundwater Basin and would be available to serve the public, as needed. Per SGVMWD UWMP, SGVMWD would have sufficient water supplies to meet demand for an average year, a single dry year, and multiple dry years. Total water supply associated with SGVMWD in the year 2040 is anticipated to be approximately 48,604 AFY (SGVMWD 2017). Thus, the proposed project's demand of 11.91 AFY would equate to approximately 0.02% of SGVMWD's supplies. Therefore, SGVMWD would have sufficient supplies to accommodate the purchase of supplemental water, to be provided to the City. Lastly, because the amount of supplemental water purchased from the SGVMWD would be equal to all anticipated indoor and outdoor water demands for the proposed residential units (approximately 11.91 AFY), this additional water supply would fall within the City's allowable purchase of 2,500 AFY of supplemental water from SGVMWD. Therefore, the additional supplemental water procured by the City as a result of the project has been accounted for in SGVMWD's UWMP. Therefore, because the proposed project would not result in a significant increase demand of the SMWD's or SGVMWD's existing supplies, and because both SMWD and SGVMWD have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, impacts would be **less than significant.**

[2] Multiple dry year (fifth year) demand projections were chosen to provide a conservative analysis.

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?*

See discussion of sewer/wastewater under Threshold 1. Impacts would be **less than significant.**

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?*

As discussed in Section 4.19.1, solid waste management services for the City are provided by Athens Services. Refuse collection is conducted once a week for most residential and commercial customers. Some commercial and multi-unit properties may have service more frequently if needed. For residential customers, Athens Services provides a three-can system to separate waste from recyclable material and organic material. The City is a member of the Scholl Canyon Watershed, so the refuse produced by the City is taken to Scholl Canyon Landfill. This Scholl Canyon Landfill is allowed to receive 3,400 tons per day, has a maximum capacity of 58.9 million tons, and a remaining capacity of 9.9 million tons. It is anticipated that this Scholl Canyon Landfill will cease operation in 2030 (CalRecycle 2019). As such, the available capacity of the landfill would be able to accommodate development allowed under the project. Thus, impacts would be **less than significant**.

5. *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

As previously discussed in Section 4.19.2, the project would comply with the California Integrated Waste Management Act (AB 939 and AB 341) which mandate a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000 and the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020 and annually thereafter. The City has also joined the Los Angeles Regional Agency with 17 Southern California cities, including the City of Los Angeles, to work cooperatively to increase diversion rates to the maximum extent possible. Public recycling containers are provided at Memorial Park, Sierra Vista Park, and a large roll-off bin is available to residents for recycling at the west side of Sierra Vista Park below the Sierra Madre Rose Float building. City staff provides recycling information outreach through various communication tools throughout the year, including a brochure available at City facilities, and also provides outreach at many City events, such as the Wistaria Festival and Public Works Open House. Diversion rates for the City have been at about 57% annually for the past 5 years, with the exception of a period following the 2012 windstorm event which caused a drop to approximately 54% (City of Sierra Madre 2015). Furthermore, the City has adopted the Household Hazardous Waste Element to eliminate household hazardous wastes from the City's waste stream. The City's residents are provided with opportunities to safely dispose of common household goods that are not allowed into the traditional waste stream. In addition, the City collects used batteries via a program with County of Los Angeles Libraries, and three local businesses have also signed up to be collection centers for used batteries through a San Gabriel Valley Council of Governments program. Used sharps needles, syringes, lancets, etc. are also considered hazardous waste, and the City provides approved containers and information on locations where these can be safely disposed. Finally, the City has partnered with the Cities of Bradbury and Monrovia to administer a used oil collection grant from CalRecycle to provide and publicize certified used oil collection centers in the area (City of Sierra Madre 2015).

The project would be in compliance with all federal, state, and local management and reduction statutes and regulations related to solid wastes. Therefore, impacts would be **less than significant**.

4.19.6 Mitigation Measures

Impacts were found to be less than significant. No mitigation is required.

4.19.7 Level of Significance After Mitigation

Impacts to utilities and service system would be **less than significant**. No mitigation is required.

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4.20 Wildfire

This section of the Environmental Impact Report (EIR) describes the existing wildfire conditions within the vicinity of The Meadows at Bailey Canyon Specific Plan (project or proposed project) site, identifies associated regulatory requirements, evaluates potential impacts associated with wildfire and contribution to regional wildfire conditions, and identifies mitigation measures related to implementation of the proposed project. Fire protection services for the project are addressed in Section 4.15, Public Services, of this EIR. A Fire Protection Plan (FPP), which evaluated and identified potential fire risks associated with the project, was prepared for the project by Dudek in November 2020 and has been included as Appendix F2 of this EIR.

4.20.1 Existing Conditions

Project Site

Wildfire is a continuous threat in Southern California, and is particularly concerning in the wildland/urban interface (WUI), the geographic area where urban development either abuts or intermingles with wildland or vegetative fuels. The project site is located within the northwestern portion of the City of Sierra Madre (City), approximately 460 feet south of the base of the San Gabriel Mountains.

The northwestern portion of the project site borders the City of Pasadena, while the San Gabriel Mountains are located just north of the site. The site is bordered by Bailey Canyon, Bailey Canyon Debris Basin, and Bailey Canyon Wilderness Park to the east, existing single-family residential development to the south and west, and the Mater Dolorosa Retreat Center, which is primarily used to host religious and silent retreats and other activities, to the north. It should be noted that the Mater Dolorosa Retreat Center is on the same parcel as the project site and there are two access roads through the site to the Mater Dolorosa Retreat Center. However, the Mater Dolorosa Retreat Center is not a part of the project site.

The project site is located in a WUI area and an area statutorily designated a local responsibility area (LRA) very high fire hazard severity zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE) and the Sierra Madre Fire Department (SMFD) (see Figure 4.9-2, Fire Hazard Severity Zones, in Section 4.9, Hazards and Hazardous Materials). SMFD is a single station department located at 242 W. Sierra Madre Boulevard, located approximately 0.7 miles south of the project site (Appendix F2).

Topography

Topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread up-slope and slower fire spread down-slope in the absence of wind. Flat terrain tends to have little effect on fire spread, resulting in fires that are driven by wind.

The project site is just below the base of the San Gabriel Mountains, which are north of the site. The project site is relatively flat and gently sloping downward from north to south. Elevation at the site ranges from approximately 1,105 feet above mean sea level at the lower, southeastern portion of the site to 1,220 feet above mean sea level at the higher, northwestern portion of the site (Appendix F2).

A topographic feature that may present a fire spread facilitator is the adjacent canyon, which may serve to funnel or channel winds, thus increasing their velocity and potential for influencing wildfire behavior. Immediately to the east of the project site is Bailey Canyon and the Bailey Debris Basin. From a regional perspective, the alignment of

tributary canyons and dominant ridges are conducive to channeling and funneling wind, thereby increasing the potential for more extreme wildfire behavior in the region (Appendix F2).

Vegetation Communities

The vegetation on site is primarily disturbed habitat (mowed annual grasses) with scattered ornamental trees. With residential development to the west and south, the Mater Dolorosa Retreat Center to the north, and debris basin to the east, there is minimal native vegetation nearby the project site (Appendix F2).

The area of the project site proposed for development and within the project grading limits would be converted to roads, structures, and landscaped vegetation following project completion.

Vegetation Dynamics

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, non-native grass dominated plant communities become seasonally prone to ignition and produce lower intensity, higher spread rate fires. In comparison, sage scrub can produce higher heat intensity and higher flame lengths under strong, dry wind patterns, but does not typically ignite or spread as quickly as light, flashy grass fuels (Appendix F2).

A critical factor to consider is the dynamic nature of vegetation communities. Fire presence and absence at varying cycles or regimes disrupts plant succession, setting plant communities to an earlier state where less fuel is present for a period of time as the plant community begins its succession again. In summary, high-frequency fires tend to convert shrublands to grasslands or maintain grasslands, while fire exclusion tends to convert grasslands to shrublands, over time. In general, biomass and associated fuel loading would increase over time, assuming that disturbance (fire, or grading) or fuel reduction efforts are not diligently implemented (Appendix F2).

It is possible to alter successional pathways for varying plant communities through manual alteration. This concept is a key component in the overall establishment and maintenance of the proposed fuel modification zones on site. The fuel modification areas on this site would consist of irrigated and maintained landscapes that would be subject to regular maintenance and would not be allowed to accumulate excessive biomass (live or dead) over time, which results in reduced fire ignition, spread rates, and intensity (Appendix F2).

Climate

Climate at the project site, like much of Southern California, is influenced by the Pacific Ocean and a seasonal, migratory subtropical high-pressure cell known as the “Pacific High.” Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. This climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds. The average high temperature for the project area is approximately 74°F, with daily highs in the summer and early fall months (July–October) exceeding 95°F. Precipitation typically occurs between December and March with average rainfall of 18 inches (Appendix F2).

Throughout southern California, and specifically at the project site, climate has a large influence on fire risk. The climate of Los Angeles County is typical of a Mediterranean area, with warm, dry summers and cold, wet winters. Temperatures average (average annual) around 61°F and reach up to 100°F. Precipitation has been averaging

less than 16 inches and typically occurs between December and March. The prevailing wind is an on-shore flow between 7 and 11 miles per hour from the Pacific Ocean (Appendix F2).

Fires can be a significant issue during summer and fall, before the rainy period, especially during dry Santa Ana wind events. The seasonal Santa Ana winds can be particularly strong in the area of the project site as warm and dry air is channeled from the dry, desert land to the east. Although Santa Ana events can occur anytime of the year, they generally occur during the autumn months, although the last few years have resulted in spring (April through May) and summer events. Santa Ana winds may gust up to 75 miles per hour or higher. This phenomenon markedly increases the wildfire danger and intensity in the area of the project site by drying out and preheating vegetation (fuel moisture of less than 5% for 1-hour fuels is possible) as well as accelerating oxygen supply, and thereby, making possible the burning of fuels that otherwise might not burn under cooler, moister conditions (Appendix F2).

Fire History

As stated in the FPP, 74 wildfires have burned within 5 miles of the project site since the beginning of the historical fire data record (refer to Appendix F2). Recorded wildfires within 5 miles range from fewer than 5 acres to 160,000 acres, and the average fire size is approximately 4,500 acres. The 2020 Bobcat Fire (115,796 acres) is the most recent fire, excluding smaller fires of less than 10 acres (Appendix F2).

Based on an analysis of this fire history data set, specifically the years in which the fires burned, the wildfire-occurrence intervals ranged between 0 (multiple fires in the same year) to 15 years. The average interval between fires is 2 years. Based on this analysis, it is expected that there would be wildland fires within 5 miles of the project site on a regular to semi-regular basis, as observed in the fire history record. Based on fire history, wildfire risk for the project site is associated primarily with a Santa Ana wind-driven wildfire burning or spotting onto the site from the north or east. The proximity of the project to large expanses of open space to the north and northeast, and the terrain within the San Gabriel Mountains, including multiple sub-drainages and canyons, has the potential to funnel Santa Ana winds, thereby increasing local wind speeds and increasing wildfire hazard in the vicinity of the project site (Appendix F2).

4.20.2 Relevant Plans, Policies, and Ordinances

Federal

National Fire Protection Association Codes, Standards, Practices, and Guides

National Fire Protection Association codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. National Fire Protection Association standards are recommended guidelines and nationally accepted good practices in fire protection, but are not laws or codes unless adopted as such or referenced as such by the California Fire Code (CFC) or the local fire agency.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995, updated in 2001, and again in 2009, by the National Wildfire Coordinating Group, a federal multiagency group that establishes consistent and

coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgement of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy and its implementation are founded on the following guiding principles, found in the Guidance for Implementation of Federal Wildland Fire Management Policy (National Wildfire Coordinating Group 2009):

- Firefighter and public safety is the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent would be incorporated into the planning process.
- Fire management plans, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans and activities are based upon the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective.

National Fire Plan

The National Fire Plan, officially titled Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000, was a presidential directive in 2000 as a response to severe wildland fires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and providing assurance for sufficient firefighting capacity in the future. The plan addresses the following five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The plan provides technical, financial, and resource guidance and support for wildland fire management across the United States. The U.S. Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the plan (DOI and USDA 2000).

International Fire Code

Created by the International Code Council, the International Fire Code addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage (although not a federal regulation, but rather the product of the International Code Council). The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the International Fire Code uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often times these measures include construction standards and specialized equipment). The International Fire Code uses a permit system (based on hazard classification) to ensure that required measures are instituted (ICC 2017).

International Wildland–Urban Interface Code

The International Wildland–Urban Interface Code is published by the International Code Council and is a model code addressing wildfire issues (ICC 2014).

State

California Government Code

Sections 51175–51189 of the California Government Code provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for classifying fire hazard severity zones (FHSZs) based on statewide criteria, and makes the information available for public review. Further, local agencies must designate, by ordinance, Very High FHSZs within their jurisdiction based on the recommendations of CAL FIRE.

Section 51182 of the California Government Code sets forth requirements for maintaining property within fire hazard areas, such as defensible space, vegetative fuels management, and building materials and standards. Defensible space around structures in fire hazard areas must consist of 100 feet of fuel modification on each side of a structure, but not beyond the property line unless findings conclude that the clearing is necessary to significantly reduce the risk of structure ignition in the event of a wildfire. Clearance on adjacent property shall only be conducted following written consent by the adjacent owner. Further, trees must be trimmed from within 10 feet of the outlet of a chimney or stovepipe, vegetation near buildings must be maintained, and roofs of structures must be cleared of vegetative materials. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Code of Regulations

Title 14 Natural Resources

Title 14, Division 1.5, Chapter 7, Subchapter 3, Fire Hazard, also sets forth requirements for defensible space if the distances specified in Section 51182 of the California Government Code (outlined above) cannot be met. For example, options that have similar practical effects include noncombustible block walls or fences, 5 feet of noncombustible material horizontally around the structure, installing hardscape landscaping or reducing exposed windows on the side of the structure with a less than 30-foot setback, or additional structure hardening such as those required in the California Building Code, California Code of Regulations Title 24, Part 2, Chapter 7A.

Title 24 California Building Standards Code

California Building Code

Part 2 of Title 24 of the California Building Standards Code contains the California Building Code (CBC). Chapter 7A of the California Building Code regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a fire hazard area. Fire hazard areas as defined by the California Building Code include areas identified as an FHSZ within a State Responsibility Area or a WUI fire area. The purpose of Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of structures located in a fire hazard area to resist the intrusion of flames or burning embers projected by a wildfire, and to contribute to a systematic reduction in structural losses from a wildfire. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in Chapter 7A.

California Fire Code

Part 9 of Title 24 of the California Building Standards Code contains the CFC, which incorporates by adoption the International Fire Code with necessary California amendments. The purpose of the CFC is to establish the

minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. Chapter 49 of the CFC contains minimum standards for development in the WUI and fire hazard areas.

The CFC and Office of the State Fire Marshal provide regulations and guidance for local agencies in the development and enforcement of fire safety standards. The CFC is updated and published every 3 years by the California Building Standards Commission. The 2016 CFC took effect on January 1, 2017, and the 2019 CFC took effect on January 1, 2020. The City adopted the 2016 CFC with local amendments in August 2018.

California Public Resources Code

California Public Resources Code Section 4290 requires minimum fire safety standards related to defensible space that are applicable to residential, commercial, and industrial building construction in State Responsibility Area lands and lands classified and designated as VHFHSZs. These regulations include road standards for fire apparatus access, standards for signs identifying roads and buildings, fuel breaks and green belts, and minimum water supply requirements. These regulations do not supersede local regulations, which are equal to or exceed minimum regulations required by the state.

California Public Resources Code Section 4291 requires a reduction of fire hazards around buildings located adjacent to a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered in flammable material. It is required to maintain 100 feet of defensible space around all sides of a structure, but not beyond the property line unless required by state law, local ordinance, rule, or regulations. Further, California Public Resources Code Section 4291 requires the removal of dead or dying vegetative materials from the roof of a structure, and trees and shrubs must be trimmed from within 10 feet of the outlet of a chimney or stovepipe. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

Fire Hazard Severity Zones

CAL FIRE maps FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors as directed by California Public Resources Code, Sections 4201–4204, and California Government Code, Sections 51175–51189. FHSZs are ranked from Moderate to Very High, and are categorized for fire protection within a Federal Responsibility Area, State Responsibility Area, or Local Responsibility Area under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively. The project site is within a WUI location within the LRA VHFSZ by the City and CAL FIRE (CAL FIRE 2009).

California Strategic Fire Plan

The 2019 Strategic Fire Plan for California reflects CAL FIRE's focus on fire prevention and suppression activities to protect lives, property, and ecosystem services, as well as natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. The Strategic Fire Plan for California provides a vision for a natural environment that is more fire resilient, buildings and infrastructure that are more fire resistant, and a society that is more aware of and responsive to the benefits and threats of wildland fire, all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2019). The Strategic Fire Plan goals include the following:

- Identify and evaluate wildland fire hazards and recognize life, property, and natural resource assets at risk, including watershed, habitat, social, and other values of functioning ecosystems. Facilitate the

collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.

- Promote and support local land use planning processes as they relate to (a) protection of life, property, and natural resources from risks associated with wildland fire; and (b) individual landowner objectives and responsibilities.
- Support and participate in the collaborative development and implementation of local, county, and regional plans that address fire protection and landowner objectives.
- Increase fire prevention awareness, knowledge, and actions implemented by individuals and communities to reduce human loss, property damage, and impacts to natural resources from wildland fires.
- Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
- Determine the level of resources necessary to effectively identify, plan, and implement fire prevention using adaptive management strategies.
- Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
- Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities, but can give and receive help whenever needed.

Local

City of Sierra Madre Local Hazard Mitigation Plan

The City is in the process of preparing a Local Hazard Mitigation Plan (LHMP) and a draft was released for public review in February 2020. The LHMP includes a broad range of activities designed to protect homes, schools, public buildings and critical facilities. The purpose of a LHMP is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the City. An updated and adopted Plan is required not only to reduce risk to the community, but to maintain eligibility for certain types of non-emergency, disaster mitigation funding from the Federal Emergency Management Agency (FEMA) under the Disaster Mitigation Act of 2000.

Sierra Madre General Plan

The following objectives and policies from the City of Sierra Madre General Plan (General Plan) are relevant to the project (City of Sierra Madre 2015). The proposed project's consistency with these policies is provided in Table 4.11-1 in Section 4.11, Land Use and Planning.

Objective Hz1: Providing adequate service levels of fire protection that meets the needs of Sierra Madre residents, businesses and visitors.

Policy Hz1. 2: Promote public education about fire safety at home, in the community, and in the work place.

Objective Hz2: Providing adequate fire protection necessary for existing and future development.

Policy Hz2.1: Continue to require all existing and new development to install and maintain adequate smoke detection systems.

Policy Hz2.2: Continue to require all new development to install automatic fire sprinkler systems.

Policy Hz2.3: Continue to require review of building plans by a Fire Captain.

Policy Hz2.8: Develop vegetation management plans that manage chemise and chaparral to ensure adequate firebreaks, to provide adequate access for fire protection water systems, and access for firefighting.

Objective Hz4: Addressing emergency operations and disaster preparedness as a priority.

Objective Hz5: Limiting fire hazard through brush and weed abatement.

Policy Hz5.1: Mandate annual brush removal from April to June.

City of Sierra Madre Municipal Code

Title 15, Chapter 15.24 of the Sierra Madre Municipal Code (SMMC) contains the California Fire Code (CFC), 2019 Edition. The CFC shall be enforced by the bureau of fire prevention in the fire department of the City, which is established and which shall be operated under the supervision of the chief of the fire department. Local amendments to the 2019 CFC that shall be incorporated into the SMMC and serve as requirements for emergency planning and preparedness (Section 15.24.070).

Fire Protection Plan

A Fire Protection Plan (FPP) was prepared for the project in November 2020 (Appendix F2). The FPP evaluates and identifies the potential fire risk associated with the project's land uses and identifies requirements for water supply, fuel modification and defensible space, emergency access, building ignition and fire resistance, fire protection systems, and wildfire emergency pre-planning, among other pertinent fire protection criteria. The purpose of the FPP is to generate and memorialize the fire safety requirements of the City along with project-specific measures based on the site, its intended use, and its fire environment. Compliance with these measures would be required under **PDF-WF-1** (see Section 4.20.4, Project Design Features).

4.20.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to wildfire are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to wildfire would occur if the project would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
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.
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.

4.20.4 Project Design Features

The following project design feature (PDF) would be implemented as part of the proposed project and would be applicable to wildfire:

PDF-WF-1 The proposed project shall comply with the requirements outlined in the Fire Protection Plan (FPP) (Appendix F2) during construction and operations.

4.20.5 Impacts Analysis

1. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

The City has not adopted an emergency response plan or emergency evacuation plan. However, the City is in the process of preparing a Local Hazard Mitigation Plan (LHMP) and a draft was released for public review in February 2020 (City of Sierra Madre 2020). The purpose of a LHMP is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the City.

As stated in Section 4.20.1, Existing Conditions, the project site is within a WUI that is in an area statutorily designated an LRA VHFHSZ by CAL FIRE and the SMFD (Appendix F2). Additionally, as seen in Figure 4.9-2, Fire Hazard Severity Zones, the project site is designated by the City as a Very High Hazard area (City of Sierra Madre 2015). This designation does not indicate that development cannot occur safely, but does indicate that a higher level of ignition resistant construction must be implemented.

During construction of the project, a temporary increase in traffic on roadways surrounding the project site may occur due to increased truck loads or the transport of construction equipment to and from the project site during the construction period. However, all construction activities including staging would occur in accordance with City requirements (such as SMMC Chapter 17.30, which requires that streets be maintained free and clear during construction), which would ensure that adequate emergency access to the project site in the event of an emergency or evacuation order would be provided during construction of the project. The site is directly accessible by two existing roadways, North Sunnyside Avenue, a north/south road currently ending on the

southern side of the site, and Carter Avenue, an east/west road currently ending on the southeast corner of the site. However, the project would include reconfiguration of North Sunnyside Avenue, which would be moved farther to the west. In addition, the project would be improved to provide secondary egress and ingress access to the site, as well as provide internal circulation throughout the project site. Lastly, three additional streets that run east to west would be provided within the project site. This includes Streets A, B, and C (see Figure 3-2, Conceptual Site Plan, in Chapter 3, Project Description, of this EIR). The proposed street sections are shown in Figure 3-6, Proposed Street Sections, in Chapter 3. The proposed driveways and roadways (proposed and existing) providing access to the project site would comply with the City's roadway standards and the 2019 CFC Section 503. Additionally, all access roads would meet SMMC standards, requiring roadways to have a minimum 20-foot unobstructed width (30- and 36-foot-wide roadway surfaces are proposed) and a minimum 26-foot width within 25 feet of hydrants.

As discussed in the FPP, early evacuation for any type of wildfire emergency near the project site is the preferred method of providing for resident safety, consistent with the City's current approach. As such, each property owner would be individually responsible to adopt, practice, and implement a "Ready, Set, Go!" approach to site evacuation. The "Ready, Set, Go!" concept is widely known and encouraged by the state of California and most fire agencies. Pre-planning for emergencies, including wildfire emergencies, focuses on being prepared, having a well-defined plan, minimizing potential for errors, maintaining the site's fire protection systems, and implementing a conservative (evacuate as early as possible) approach to evacuation and site uses during periods of fire weather extremes. Implementation of these evacuation requirements, outlined in the FPP would ensure that residents of the proposed project and nearby land uses, including the Mater Dolorosa Retreat Center and nearby residential uses, would be able to properly evacuate in the event of wildfire. During wildfire evacuations, law enforcement and fire agencies would manage the evacuation event and provide downstream intersection control, as needed, to move persons within higher threat areas to lower threat areas. Because the project and Mater Dolorosa Retreat Center would respond to evacuation orders according to provided direction, and depending on the threat level, would be aided by downstream intersection control, it is not anticipated that substantial delays to the existing population would occur. Therefore, through compliance with existing regulations and implementation of **PDF-WF-1**, which requires compliance with the FPP (see Section 4.20.4, Project Design Features), the proposed project would not impair implementation of the LHMP once adopted. and because there is no officially adopted evacuation plan for the area, would therefore not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be **less than significant**.

2. *Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

As stated in Section 4.20.1, Existing Conditions, the project site is within a WUI that is in an area statutorily designated an LRA VHFHSZ by CAL FIRE and the SMFD (see Figure 4.9-2). As such, the project could result in an impact related to exacerbating wildfire risk that exposes project occupants to pollutant concentrations from a wildfire or the uncontrollable spread of a wildfire if it would increase the risk of a wildfire occurring and the climatic, topographic, vegetation, weather conditions, and other factors that aid in increasing the severity of such an occurrence.

Construction

Construction of the project would introduce potential ignition sources to the project site, including the use of heavy machinery and the potential for sparks during welding activities or other work that uses fire- or spark-producing tools. However, the project would be required to comply with City and state requirements for activities

in hazardous fire areas, including fire safety practices, to reduce the possibility of fires during construction activities. As discussed in the FPP prepared for the project, prior to bringing lumber or combustible materials onto the site, site improvements within the active development area shall be in place, including utilities, operable fire hydrants, an approved, temporary roadway surface, and construction phase fuel modification zones established. These features would be approved by the fire department or their designee prior to combustibles being brought on site. Furthermore, vegetation management would be implemented as an interim fuel modification zone (FMZ) throughout the construction phase as there may be periods of time where structures are exposed to wildland fuels, consistent with the FPP (Appendix F2). Therefore, with adherence of the aforementioned vegetation management throughout construction, and implementation of **PDF-WF-1**, which requires compliance with the FPP (see Section 4.20.4), risk associated with exposure of pollutant concentrations would be reduced greatly. Additionally, construction activities that would potentially introduce potential ignition sources would be temporary. Therefore, impacts to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be **less than significant** during construction.

Operational

As mentioned previously, the project site is located in an area statutorily designated as an LRA VHFHSZ (refer to Appendix F2). Thus, the project includes fire resistance-related measures that shall lessen the potential impact of the project exacerbating wildfire risk.

All new structures within the project site would be constructed to at least the California Fire Code standard. Each of the proposed buildings would comply with the enhanced ignition-resistant construction standards of the 2019 CBC (Chapter 7A) and Chapter 5 of the UWI code, except where buildings require enhanced ignition resistance as part of an alternative material and method proposal. These requirements were specifically developed to address structure vulnerabilities related to wildfire and address roofs, eaves, exterior walls, vents, appendages, windows, and doors and result in hardened structures that have been proven to perform at high levels (resist ignition) during the typically short duration of exposure to burning vegetation from wildfires. In addition, the project would include fire protection systems, including fire hydrants, automatic fire sprinkler system, fire alarm systems, and residential hazard detectors (see Appendix F2 and Section 4.9 for further details).

Per Chapter 17.52 of the SMMC, the City shall incorporate fire prevention and landscaping standards. Based on the conceptual site plan, the buildings on the project site have adequate on-site fuel modification, which consists of asphalt roadways and irrigated landscaping. There are no areas proposed within the project footprint that will have native vegetation in a natural or non-irrigated setting that may be subject to fuel modification; instead, all areas will either be developed, paved or landscaped and irrigated. Dudek's analysis of the project during preparation of the FPP determined that due to the fire environment, the enhanced building features, fire protection systems, and exterior site design layout, a traditional FMZ configuration is not necessary. Instead a Fuel Modification Area (FMA) would be implemented, that would take advantage of the project's setting and design layout.

While the eastern side of the project is most susceptible to wildfire, the adjacent Bailey Canyon Debris Basin is maintained free of vegetation providing an off-site fuel break. The FMA would be designated primarily for the eastern perimeter of the project, yet it would also apply to the irrigated landscaped areas and interior slopes throughout the project for maintenance purposes. The FMA would start from the edge of the developed pads to the boundary of the project and include the interior slopes, greenbelts, and park. Furthermore, per the FPP, vegetation management, i.e., assessment of fuel condition and removal of dead and dying and undesirable species, as well as thinning as necessary to maintain specified plant spacing and fuel densities, shall be

completed annually, and more often as needed for fire safety, as determined by the SMFD. The individual homeowners shall be responsible for all vegetation maintenance on their lots in compliance with the FPP and the SMFD requirements.

Therefore, impacts associated with slope, prevailing winds, and other factors, that would cause the project to exacerbate wildfire risks would be **less than significant**.

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?***

Under the proposed project, the project site would be allowed to be developed with residential uses, with associated infrastructure and a proposed park. As such, the project would include installation and maintenance of associated infrastructure including driveways and roadways, connections to service utilities (e.g., water, wastewater, electric power, natural gas, and telecommunications services), water drainage and water quality improvements (e.g., biofiltration basins), and fuel breaks (e.g., fuel modification).

Fuel Modification Area

The proposed project would have adequate on-site fuel modification, which consists of asphalt roadways and irrigated landscaping. No areas of native vegetation in a natural or non-irrigated setting that may be subject to fuel modification would remain on site after implementation of the project; instead, all areas would either be developed, paved or landscaped and irrigated. Vegetation management would be implemented as an interim FMZ throughout the construction phase as there may be periods of time where structures are exposed to wildland fuels. Ongoing/as-needed fuel modification maintenance during the interim period while the project is built out, would include necessary measures for consistency with the FPP.

An important component of a fire protection system for the project is the provision for ignition-resistant construction and modified vegetation buffers. The structure ignition resistance requirements outlined in the Fire and Building codes would enable the structures to withstand the type of wildfire that may occur in the fuels outside the development footprint. As described under Threshold 2 above and determined by Dudek during preparation of the FPP, a traditional FMZ configuration would not be necessary during operations of the project due to the fire environment, the enhanced building features, fire protection systems, and exterior site design layout. Instead an FMA would be implemented, that would take advantage of the project's setting and design layout. The internal circulation system includes paved roadways along the eastern and northern sides of the project thereby providing over 40 feet of noncombustible defensible space in both locations. Irrigated greenbelts along the perimeter of the project, and an irrigated park along the southern side of the project, provide fire and ember resistant landscaping for additional protection and fuel modification zone equivalency. The combination of paved streets and irrigated greenbelt landscaping provides for at least 100 feet of FMA around all buildings. In addition, the project would include 200 feet of FMA on the southern side of the project, 62 to 100 feet of FMA on the eastern side, and over 100 feet of FMA on the northern side. Implementation of these FMAs would be required under the FPP (Appendix F2). West of the project is an existing residential development that provides FMA equivalent landscape.

Vegetation Management

Vegetation management, including the assessment of fuel condition and removal of dead and dying and undesirable species, as well as thinning as necessary to maintain specified plant spacing and fuel densities, shall be completed annually each year, and more often as needed for fire safety, as determined by the SMFD. The

individual homeowners shall be responsible for all vegetation maintenance on their lots in compliance with the FPP and the SMFD requirements.

Vegetation management requirements shall be implemented at project commencement and throughout the construction phases, as outlined in the FPP (Appendix F2). Vegetation management shall be performed pursuant to the direction of the SMFD on all building locations prior to the start of work and prior to any import of combustible construction materials. Adequate fuel breaks shall be created around all grading, site work, and other construction activities in areas where there is flammable vegetation.

Roads

The project would include reconfiguration of North Sunnyside Avenue, located within the western portion of the site, which would be moved farther to the west. In addition, the project would result in improvements to Carter Avenue to provide secondary egress and ingress access to the site. Lastly, three additional streets that run east to west would be provided within the project site. This includes Streets A, B, and C (see Figure 3-2, Conceptual Site Plan, in Chapter 3). The proposed street sections are shown in Figure 3-6, Proposed Street Sections, in Chapter 3. The internal circulation system includes paved roadways along the eastern and northern sides of the project thereby providing over 40 feet of noncombustible defensible space in both locations. Project site access, including road widths and connectivity, would be consistent with the City's roadway standards and the 2019 CFC Section 503. Additionally, approved paved access roadways shall be installed prior to any combustibles being brought on site. Proposed roadway system designs would include roadways with a minimum 20-foot unobstructed width (30- and 36-foot-wide roadway surfaces) and a minimum 26-foot width within 25 feet of hydrants; hydrants installed along the roadways and within the project site itself; the existing Carter Avenue access improved to meet fire apparatus access road requirements; direct access provided to all structures within interconnecting driveways; and through roadways (hence, no designated fire department turnarounds would be required for the project site). Site access, including road widths and connectivity, would also comply with all City requirements and would include the following:

- Primary access to the project site would be provided from North Sunnyside Avenue. Carter Avenue would provide secondary egress and ingress access.
- All roads comply with access road standards of not less than 24 feet, unobstructed width and are capable of supporting an imposed load of at least 75,000 pounds.
- Roadways and/or driveways will provide fire department access to within 150 feet of all portions of the exterior walls of the first floor of each structure.
- Roadway design features (e.g., speed bumps, humps, speed control dips, planters, and fountains) that could interfere with emergency apparatus response speeds and required unobstructed access road widths will not be installed or allowed to remain on roadways.
- Access roads shall be completed and paved prior to issuance of building permits and prior to the occurrence of combustible construction.
- Developer will provide information illustrating the new roads, in a format acceptable to the SMFD for updating of Fire Department response maps.

Utilities

As discussed in Section 4.19, Utilities and Service Systems, of this EIR, existing utility service lines are located within the vicinity of the project site, and connection to utility service lines would be implemented as part of the

project. Connections to utility service lines, including those for water, wastewater, electric power, natural gas, and telecommunications services, would be extended underground from their current locations nearby the project site to the proposed residential structures. Given that the activity of connecting utilities from their current locations (i.e., within Carter Avenue and North Sunnyside Avenue) to the project site would require ground disturbance and the use of heavy machinery associated with trenching, the installation of these utility service lines would introduce new potential sources of ignition to the site, such as the use of heavy machinery, welding, or other hot work. However, as previously discussed, vegetation management activities would occur throughout construction phases, which would reduce the likelihood of fire ignition during installation and connection of utilities.

Further, other than lateral connections to nearby utility mains, the project would not require or result in the relocation or construction of new or expanded service utilities facilities, the construction or relocation of which could exacerbate wildfire risk or cause significant environmental effects.

Summary

Installation and maintenance of project roads, service utilities, fuel modification, drainage and water quality improvements, and other associated infrastructure would not exacerbate wildfire risks provided that the appropriate fire prevention and vegetation management activities are implemented as required by the FPP and SMMC.

Given that the activities involved with installation or maintenance of associated infrastructure would require ground disturbance and the use of heavy machinery associated with trenching, grading, site work, and other construction and maintenance activities, the installation of related infrastructure could potentially result in temporary or ongoing impacts to the environment. However, the project would be required to comply with all regulatory requirements such as the SMMC and the requirements of the FPP (see **PDF-WF-1** in Section 4.20.4, above).

Therefore, the installation and maintenance of associated infrastructure would not exacerbate wildfire risk or result in impacts to the environment beyond those already disclosed in this EIR, and impacts would be **less than significant**.

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?

The project would establish the Specific Plan, which would allow for the development of 42 detached single-family residential units and an approximately 3.04-acre dedicated neighborhood park, within the 17.30-acre project site, resulting in the addition of more impervious area to the site, which would result in more surface runoff. However, as part of project site improvements, the project would include a new 36-inch-diameter storm drain on the western portion of the site, which would run from the north to south. From the southern edge, the proposed storm drain would join an existing 36-inch-diameter storm drain located within North Sunnyside Avenue (see Figure 3-7, Proposed Drainage Plan, in Chapter 3). In addition, four proposed catch basins are proposed. This includes two catch basins proposed on either side of North Sunnyside Avenue within the project site, and two catch basins on either side of North Sunnyside Avenue just north of project site, to capture off-site flows before entering the project site. Flows would then be conveyed via the municipal separate storm sewer system (MS4) to the receiving waters of Arcadia Wash, an open concrete lined channel located approximately 1 mile southeast of the project site. In addition, a proposed 36-inch-diameter storm drain network would be constructed along Carter Avenue, and would consist of seven catch basins and captures and would convey street flow from proposed Streets A, B, and C to a proposed detention basin before being discharged to the MS4 (see Figure 3-7). The proposed detention basin would be 77 by 60 feet (4,260 square feet) and located in the southeastern portion of the project site. The proposed detention basin would assist in reducing runoff velocities generated by the project site.

Additionally, the project site is located in Zone X, an area of minimal flood hazard per the FEMA Flood Insurance Rate Map Panel 06037C1400F effective September 26, 2008 (FEMA 2020). This area is higher in elevation than the 0.2% annual chance flood (i.e., 500-year flood). Although internal drainage patterns would be somewhat altered as a result of project development, the project would maintain adequate stormwater conveyance as to not result in an increase of surface runoff that would result in flooding on or off site. Furthermore, due to the relatively flat topography of the site, there is low potential for landslides to occur. However, with compliance of the Los Angeles Region erosion and grading requirements of the city building official of Public Works, current seismic design specifications, current CBC standards, and other regulatory requirements, the potential for impacts associated with landslides would be further minimalized.

In the event of a fire, the project site would potentially experience physical changes to the landscape which could result in increased risk of flooding or landslides. However, as previously discussed, under existing conditions the project has low risk for landslides and flooding. Additionally, proposed drainage improvements and adherence to the aforementioned CBC standards and regulatory requirements would further reduce potential impacts. Therefore, impacts associated with downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes would be **less than significant**.

4.20.6 Mitigation Measures

Impacts would be less than significant. No mitigation measures would be required.

4.20.7 Level of Significance After Mitigation

Impacts would be **less than significant**. No mitigation measures would be required.

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5 Cumulative Effects

This section evaluates potential cumulative impacts of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) and identifies mitigation measures related to implementation of the proposed project. Information contained in this section is based on analysis contained within Sections 4.1 through 4.20 of this Draft Environmental Impact Report (EIR) and the list of related projects from the City of Sierra Madre (City). Other sources consulted are listed in Chapter 9, References.

5.1 Introduction

Although the environmental effects of an individual project may not be significant when that project is considered independently, the combined effects of several projects may be significant when considered collectively. Such impacts are cumulative impacts. Section 15355 of the California Environmental Quality Act (CEQA) Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines provides guidance for analyzing significant cumulative impacts in an EIR. According to this section of the CEQA Guidelines, the discussion of cumulative impacts "need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness." The discussion should also focus only on significant effects resulting from the project's incremental effects and the effects of other projects. According to Section 15130(a)(1), "An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR."

Cumulative effects can occur from the interactive effects of a single project. For example, the combination of noise and dust generated during construction activities can be additive and can have a greater impact than either noise or dust alone. However, substantial cumulative effects more often result from the combined effect of past, present, and future projects located in proximity to the project under review. Therefore, it is important for a cumulative impacts analysis to be viewed over time and in conjunction with other related past, present, and reasonably foreseeable future developments whose impacts might compound or interrelate with those of the project under review.

5.2 Cumulative Methodology

Section 15130(b)(1)(A) of the CEQA Guidelines allows for the preparation of a list of past, present, and reasonably anticipated future projects as a viable method of determining cumulative impacts. This discussion uses the following approach: an initial list and description of all related (cumulative) projects is presented, followed by a discussion of the effects that the proposed project may have on each environmental category of concern, such as traffic, noise, etc. Consistent with CEQA (California Public Resources Code, Section 21000 et seq.), this discussion is guided by the standards of practicality and reasonableness.

5.3 Cumulative Projects

Other than air quality, greenhouse gas emissions, noise, and transportation/traffic, cumulative impacts for all other environmental issue areas are based on a list of projects within the proposed project's study area that either have applications submitted or approved, are under construction, or have recently been completed. Based

on information provided by the City, three cumulative projects were considered in this analysis. In addition, one cumulative project in the City of Pasadena, located directly to the east of the site, was considered. The cumulative projects identified in the study area are listed in Table 5-1, and the numbers correspond to the numbers shown on Figure 5-1, Cumulative Projects.

Table 5-1. Cumulative Projects List

No.	Project Name	Location	Project Type	Status
1	Stonegate	600, 620, 630, and 638 Baldwin Court; 1, 7, and 15 Nathaniel Terrace, Sierra Madre, CA 91024	Construction of 29 single-family residences	Approved
2	Stonehouse	Approximately 600 feet north of East Grandview Avenue, between Valle Vista Drive and Lilliano Drive	Vesting Tentative Tract Map for a subdivision including 9 new lots	Pending
3	N/A	370 N. Grove Street, Sierra Madre	Single-Family Residence Accessory Dwelling Unit	Approved
4	N/A	3452 East Foothill Boulevard, Pasadena	Remodel an existing commercial building and the new construction of 258 residential units	Final Design Review

Sources: City of Pasadena 2020; City of Sierra Madre 2020
See Figure 5-1 for related project locations.

5.4 Cumulative Impact Analysis

The discussion below evaluates the potential for the project to contribute to an adverse cumulative impact on the environment. For issues addressed in this EIR, the thresholds used to determine significance are those presented in each of the sections of Chapter 4, Environmental Analysis. For each resource area, an introductory statement is made regarding what would amount to a significant cumulative impact in that resource area. Discussion is then presented regarding the potential for the identified cumulative projects to result in such a cumulative impact, followed by discussion of whether the project's contribution to any cumulative impact would be cumulatively considerable.

5.4.1 Aesthetics

As described in Section 4.1, Aesthetics, the proposed project would result in less-than-significant impacts to scenic vistas, and no impacts to scenic resources, including, but not limited to, tress, rock outcroppings, and historic buildings within a state scenic highway. In addition, the proposed project would not conflict with the applicable zoning as the amendment to the zoning code and General Plan would be approved concurrently with the proposed project to allow for the changes in land use and zoning. Lastly, upon compliance with guidelines of The Meadows at Bailey Canyon Specific Plan (Specific Plan) (see **PDF-AES-1** and **PDF-AES-2** in Table 3-2, Project Design Features, in Chapter 3, Project Description, and Section 4.1, Aesthetics), new sources of lighting and glare associated with the proposed project would not result in adverse day or nighttime views in the area.

The list of cumulative projects in Table 5-1 consists of new residential projects and a remodel of one commercial building. Although the existing visual character of the project site would change as a result of the proposed project, the closest of these cumulative projects is located approximately 1,000 feet southeast of the project site

and consists of construction of a single-family residence. The next closest cumulative project is located 0.65 miles east of the project site and would consist of 29 single-family residences. Due to the small size of the first cumulative project and distance to other three cumulative projects from the project site, impacts on scenic views, including views of and from the San Gabriel Mountains, the proposed project, in combination with cumulative projects, would not contribute to a cumulative impact on scenic vistas. Additionally, similar to the proposed project, all cumulative projects would be required to comply with the zoning of their respective sites and applicable regulations governing scenic quality. Therefore, in combination with planning future development, the project would not result in a cumulatively considerable contribution to a cumulative impact to aesthetics.

Existing development in the vicinity of the project site includes sources of nighttime lighting in the form of interior and exterior security lighting and parking, architectural highlighting, and landscape lighting. In addition, automobile headlights streetlights and stoplights along the roadway network contribute to ambient nighttime lighting levels on the project site. The proposed project would contribute new sources of light to the surrounding area. The Specific Plan for the proposed project includes lighting performance standards to minimize the proposed projects contribution to nighttime lighting and light sources. The project would be required to comply with lighting regulations of the Specific Plan, as outlined in **PDF-AES-1** (see Table 3-2, Project Design Features, in Chapter 3, and Section 4.1, Aesthetics). Lighting would adhere to all applicable City standards and cumulative project would also be required to adhere to City standards. In addition, as outlined in **PDF-AES-2**, solar panels shall comply with requirements outlined in the Specific Plan, and shall be oriented to the south to maximize efficiency and establish visual consistency across buildings (see Section 4.1.4, Project Design Features). Future projects would be required to comply with existing lighting standards to reduce lighting and glare impacts. Therefore, in combination with all other cumulative projects, the proposed project would not considerably contribute to lighting and glare.

Therefore, for the reasons described above, impacts to aesthetics would not be cumulatively considerable.

5.4.2 Agriculture and Forestry Resources

As discussed in Section 4.2, Agriculture and Forestry Resources, there is no important farmland land, forest land, or timberland on the project site. Additionally, neither the project site, nor any lands within the City, are zoned or designated for agricultural or forestry uses. As such, the proposed project would result in no impacts to agriculture and forestry resources along with all other cumulative projects within the City. Thus, impacts to agriculture and forestry resources would not be cumulatively considerable.

5.4.3 Air Quality

See Threshold 2 in Section 4.3.5, for a discussion of the cumulative air quality impacts of the proposed project. As described in this section, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the South Coast Air Quality Management District (SCAQMD) develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

In considering cumulative impacts from the project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the South Coast Air Basin (SCAB) is designated as nonattainment for the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. The basis for

analyzing the project's cumulatively considerable contribution is if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and consistency with the SCAQMD 2016 AQMP, which addresses the cumulative emissions in the SCAB.

As discussed in Section 4.3.1.4.1, South Coast Air Basin Attainment Designation, the SCAB has been designated as a national nonattainment area for ozone (O_3) and particles less than 10 microns in diameter (PM_{10}) and a California nonattainment area for O_3, PM_{10}, and particles less than 2.5 microns in diameter ($PM_{2.5}$). The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the project would generate volatile organic compounds (VOC) and oxides of nitrogen (NO_x) emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 4.3-8 and 4.3-9 in Section 4.3, Air Quality, of this EIR, project-generated construction and operational emissions would not exceed the SCAQMD emission-based significance thresholds for all criteria air pollutants.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative. However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed SCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

Based on the project-generated construction emissions of NO_x, the project would not result in a cumulatively considerable contribution to air quality.

5.4.4 Biological Resources

The proposed project would result in less-than-significant impacts to special-status plant and wildlife species, federally or state protected wetlands. The proposed project would not have any direct or indirect impacts on adopted habitat conservation plans. The project would have potentially significant impacts on nesting birds, riparian habitat, wetlands, and local tree preservation ordinance. Compliance with mitigation measures identified in Section 4.4, Biological Resources, would reduce potentially significant to below a level of significance.

Cumulative projects that would occur on existing undeveloped land would be required to identify and mitigate any potentially significant impacts to biological resources. Projects that would occur on previously developed land or in a highly urbanized area would have less potential to significantly impact biological resources; however, there is a potential for nesting birds to be present in ornamental landscaping or on existing buildings. The combined construction of projects within the vicinity of the proposed project could deprive some species of a significant amount of habitable space. However, it is anticipated that species that are potentially affected by related projects would also be subject to the same requirements of CEQA as the project. These determinations would be made on a case-by-case basis and the effects of cumulative development on nesting birds would be mitigated to the extent feasible in accordance with CEQA and other applicable legal requirements.

Therefore, for the reasons described above, the project would not result in a cumulatively considerable contribution to biological impacts.

5.4.5 Cultural Resources

A cumulative impact, in terms of cultural resources, refers to the mounting aggregate effect upon cultural resources due to modern or recent historic land use, such as residential development, and natural processes, such as erosion, that result from human acts. The issue that must be explored in a cumulative impact analysis is the aggregate loss of information and the loss of recognized cultural landmarks and vestiges of a community's cultural history.

As discussed in Section 4.5, Cultural Resources, no historic sites, were identified during previous cultural resource investigations, records searches, or the field survey for the proposed project. Additionally, for the reasons discussed in Section 4.5, the Mater Dolorosa Retreat Center is not considered an historical resource. Therefore, construction and operation of the proposed project would not cause a substantial change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5. In addition, although no cultural resources have been identified or recorded within the project site, two historic-period archeological sites were identified within 1 mile of the project site. As such, there exists a potential to encounter previously unidentified subsurface cultural deposits during ground disturbing activities associated with project construction and impacts to archaeological resources would be potentially significant. The proposed project would implement mitigation measures **MM-CUL-1, MM-CUL-2,** and **MM-CUL-3** to reduce potentially significant impacts less than significant. In addition, in the event that human remains are discovered during project grading and construction, impacts would be potentially significant, and **MM-CUL-4** would reduce potentially significant impacts to less than significant.

The majority of cumulative projects in the area have centered on residential development, although one commercial building expansion is included as well (see Table 5-1). These projects would have the same potential as the proposed project to impact previously uncovered subsurface cultural deposits or human remains during ground disturbing activities associated with construction. As such, cumulative projects would be required to implement similar mitigation measures as the proposed project to reduce potential impact to previously undiscovered cultural resources or human remains. When considered with other foreseeable projects, cumulative impacts to cultural resources would not be cumulatively considerable. Therefore, the project would not result in a cumulatively considerable contribution to cultural impacts.

5.4.6 Energy

Implementation of the proposed project and cumulative development in the surrounding area would result in an increased energy demand at full buildout. A significant cumulative impact to energy resources would result if a project results in wasteful, inefficient, or unnecessary consumption of energy resource or conflicts with or obstructs a state or local plan for renewable energy or energy efficiency. As discussed in Section 4.6, Energy, the proposed project would be required to comply with existing regulations such as State Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations, which would reduce energy demand and consumption. The project's impacts to energy would be less than significant. Related projects would also have to comply with existing regulation and ensure that demand can be met by existing energy infrastructure. Because the project would not result in the wasteful or inefficient use of energy, and because there is adequate energy infrastructure to serve the proposed and cumulative projects, the project's contribution to a significant cumulative energy impact would not be cumulatively considerable.

5.4.7 Geology and Soils

Potential cumulative impacts on geology and soils would result from projects that combine to create geologic hazards, including unstable geologic conditions, or substantially contribute to coastal erosion. Most geology and soil hazards associated with development on surrounding projects would be site-specific and can be mitigated on a project-by-project basis. Such hazards include direct or indirect cause substantial adverse effects to rupture of an earthquake fault, liquefaction, landslides, unstable geologic units, and expansive soils. Individual project mitigation for these hazards would ensure that there are no residual cumulative impacts. As discussed in Section 4.7, Geology and Soils, due to the presence of artificial fill area present on site, the proposed project would result in potential impacts to seismic-related ground failure and unstable soils. However, **MM-GEO-1** would be implemented to remove and recompact all artificial soil present within the limits of proposed grading prior to commencement of construction. In addition, if the project is not properly constructed, impacts to the risk of loss, injury, or death involving rupture of a known earthquake fault**;** risk of loss, injury, or death involving strong seismic ground shaking**;** seismic-related ground failure; erosion during construction and operations; and expansive soils could potentially occur**.** However, the project would comply with **PDF-GEO-1** through **PDF-GEO-15,** which include specific project recommendations from the geotechnical investigation to ensure impacts would be less than significant. Since geologic hazards are site-specific and not cumulative in nature, the proposed project would not have a cumulatively considerable impact to geologic hazards.

In addition, the potential for impacting paleontological resources vary from site to site and are dependent on specific excavation requirements for each project. As discussed in Section 4.7, Geology and Soils, the proposed project has potential to yield paleontological resources during planned construction activities. Thus, the project shall implement **MM-GEO-2** to reduce potential impacts in the event paleontological resources are uncovered during construction activities. Incorporation of mitigation would ensure proper handling and recordation of any paleontological resources encountered, and all cumulative projects with potential to encounter paleontological resources would be subject to similar requirements. Therefore, the project would not result in a cumulatively considerable impact to paleontological resources.

5.4.8 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions and their contribution to climate change are widely recognized as a global problem, and California has acknowledged this phenomenon as a state concern. Climate change is a global phenomenon and as such, the analysis of the proposed project's impacts to climate change is cumulative in nature. Therefore, the information and analysis provided in Section 4.8, Greenhouse Gas Emissions, to determine project-level impacts, applies here and the project's contribution to global climate change would not be cumulatively considerable.

As discussed in Section 4.8, the estimated total GHG emissions during construction of would be approximately 1,160 metric tons of CO_2 equivalent (MT CO_2e) over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 39 MT CO_2e per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. In addition, estimated annual project-generated GHG emissions would be approximately 794 MT CO_2e per year as a result of project operations and amortized construction. This would be less than the significance threshold of 3,000 MT CO_2e per year. Therefore, impacts related to GHG emissions associated with the project would be less than significant. In addition, the proposed project consistent with the Scoping Plan, the City's General Plan, and SCAG's Connect SoCal, which all promote economic growth

while achieving greater energy efficiency. The project would not conflict with any plans adopted with the purpose of reducing GHG emissions. Therefore, because the proposed project's impacts to climate change is cumulative in nature, the proposed project would not result in a cumulatively considerable impact to GHGs.

5.4.9 Hazards and Hazardous Materials

Cumulative impacts related to hazards and hazardous materials would result from projects that combine to increase exposure to hazards and hazardous materials. As discussed in Section 4.9, Hazards and Hazardous Materials, the proposed project would have less-than-significant impacts related to hazardous materials. Cumulative projects primarily consist of residential projects which would result in the use and transport of similar hazardous materials as the proposed project, including consumer products such as household cleaning products, landscaping chemicals and fertilizers, and other commonly used hazardous substances. Although these could be subject to accidental spillage, there is no quantifiable cumulative effect, since accidents are indiscriminate events, not related or contributory to one another. Provided that individual projects adhere to current laws governing storage, transportation, and handling of hazardous materials, no significant cumulative hazards or threats to human health and safety are anticipated.

Additionally, soils and soil vapor on the project site were evaluated due to previous agricultural uses on the project site and a former underground storage tank (UST) north of the northeast corner of the site. According to the Phase I and II Environmental Site Assessment (ESA) completed for the proposed project, no hazardous conditions related to soils or soil vapor were determined to exist due to the previous agricultural uses and former UST (Appendix F1). As such, no cumulative impacts would occur due to on-site soil conditions.

Finally, the proposed project would not exacerbate wildfire risk that could expose project occupants or structures to hazards from wildfires including pollutants or the uncontrollable spread of a wildfire. Although the project site is in a Very High Fire Hazard Severity Zone (VHFHSZ), a Fire Prevention Plan (FPP) was prepared for the proposed project to reduce wildfire risk and hazards. The proposed project would be required to comply with existing regulations related to fire protection and recommendations in the FPP, as outlined in **PDF-WF-1** (see Table 3-2, Project Design Features, in Chapter 3, Section 4.9, Hazards and Hazardous Materials, and Section 4.20, Wildfire). Cumulative projects would also be required to comply with existing regulations related to fire protection and would be required to prepare an FPP if also located within a VHFHSZ. Therefore, through compliance with existing regulations associated with wildland fires, impacts associated with wildfire would not be cumulatively considerable. Thus, the proposed project would not result in a cumulatively considerable impact to hazards and hazardous materials.

5.4.10 Hydrology and Water Quality

Cumulative hydrology impacts also result from projects combining to alter the course of surface water flow or to increase flood hazards in a particular area, either through diverting floodways or constructing structures within the floodways. Cumulative water quality impacts result from projects that combine to either pollute or increase the turbidity of water. As stated in Section 4.10, Hydrology and Water Quality, during construction and operation, the proposed project has the potential to violate water quality standards. However, implementation of a Stormwater Pollution Prevention Plan, in accordance with the Statewide Construction General Permit, incorporation of water quality best management practices, and development of proposed drainage improvements to the project site, impacts would remain below a level of significance. In addition, per the Geotechnical Investigation prepared for the project (Appendix E), **PDF-GEO-7**, which requires that fill slopes are planted to avoid erosion, and **PDF-GEO-9**, which requires erosion measures during grading and prior to the completion and

construction of permanent drainage controls, would be incorporated into the design of the project to reduce the potential for erosion or siltation on or off-site (see Section 3.3.10, Grading Plan, in Chapter 3, Project Description, for details). Furthermore, because all surrounding projects are regulated under the same City and regional Water Quality Control Board standards, they too would be required to attenuate all drainage on site (to maintain pre development flow quantities) and to incorporate hydrology and water quality design features to prevent cumulative impacts to local drainage systems or water quality. Therefore, the proposed project would not contribute to a cumulatively considerable impact related to hydrology and water quality.

5.4.11 Land Use and Planning

Significant adverse cumulative land use impacts would result from projects that contribute to development that is inconsistent with applicable plans or incompatible with existing or planned uses or planned addition of incompatible uses.

As described in Section 4.11, Land Use and Planning, the proposed project would not physically divide an established community. In addition, with incorporation of mitigation measure **MM-BIO-3** the proposed project would be consistent with the City's General Plan, the Community Forest Management Plan, and the City's Tree Preservation and Protection Ordinance. The project would be consistent with all objectives and goals of the City's General Plan, as detailed in Section 4.11.5. Further, upon approval, the proposed project would be consistent with the General Plan land use designations of the project site because the Specific Plan would be amended the General Plan prior to development of the proposed project, to allow for the proposed land uses. The proposed project would also be consistent with the Parkland Dedication Ordinance, Parks and Recreation Master Plan, and Community Forest Management Plan.

Additionally, all cumulative projects would be subject to similar criteria as the proposed project, which would ensure compliance with existing applicable land use plans with jurisdiction over the project site. Analysis of individual projects as they are submitted to the City will ensure compatibility with applicable plans and policies. Since all current and future projects would be analyzed for compatibility and compliance with land use regulations, the proposed project would not result in a cumulatively considerable impact.

5.4.12 Mineral Resources

As discussed in Section 4.12, Mineral Resources, the project site is located within an area mapped as MRZ-3. The City, including the project site, is located in areas mapped as MRZ-3 and MRZ-4, which are areas of undetermined mineral resource significance and areas where available information is inadequate for assignment to any other MRZ zone, respectively. As such, there are no locations in the City zoned or designated for mineral resource extraction, which would include all the cumulative projects listed in Table 5-1. Therefore, neither the proposed project nor any cumulative projects would result in the loss of availability of known or locally important mineral resources. Cumulative impacts would not be cumulatively considerable.

5.4.13 Noise

Related projects considered in the cumulative scenario consist of those listed in Section 5.3, Cumulative Projects. The nearest related project, identified as Number 3 in Table 5-1 and Figure 5-1, is located approximately 1,000 feet (0.19 miles) south-southeast of the proposed project site. The next-nearest related project, identified as Number 1 (Stonegate) in Table 5-1, is located approximately 3,000 feet (0.57 miles) to the east. The two other related projects are located approximately 1.5 miles or more from the project site.

Noise in Excess of Standards

The proposed project and related projects would all be subject to applicable noise standards (descriptions of the standards applicable within the City are described throughout Section 4.13.2 in Section 4.13, Noise). The proposed project would incorporate mitigation measures **MM-NOI-1** and **MM-NOI-2,** as described in Section 4.13.6 to ensure compliance with applicable noise standards. With the incorporation of the mitigation measures described in Section 4.13.6, the proposed project would not contribute to cumulative exceedances of noise standards, and its incremental effect is not cumulatively considerable.

Temporary/Periodic Increases in Ambient Noise Levels

The proposed project would result in temporary noise increases during the approximately 16-month construction period, as discussed in Chapter 3, Project Description. The proposed project's construction period would have the potential to overlap with the related projects' construction periods. The nearest related project, involving the construction of one single-family residence with an accessory dwelling unit located at 370 North Grove Street in the City of Sierra Madre, is located approximately 0.2 miles south-southeast of the proposed project site, with intervening numerous structures in between. The next nearest related project is located approximately 0.57 miles to the east, also with numerous structures, as well as vegetation and terrain, in between. Due to the decrease in noise levels with distance and the presence of physical barriers, the related projects would not combine with the proposed project to produce a cumulative noise effect during construction. Additionally, all projects would be required to comply with applicable local noise ordinances to limit noise hours during construction. The mitigation measures described in Section 4.13.6, **MM-NOI-1** and **MM-NOI-2,** along with the requirement to comply with the applicable noise regulations, would reduce the proposed project's incremental effect, ensuring that impacts are not cumulatively considerable.

Vibration

Construction-related vibration from the proposed project was addressed in Section 4.13.5. Other foreseeable projects within the vicinity of the project site would not be close enough to create a combined excessive generation of groundborne vibrations; the nearest such project would be located approximately 0.2 miles west of the project site. Therefore, cumulative impacts associated with excessive groundborne vibrations are not cumulatively considerable.

Permanent Increase in Ambient Noise Levels

Stationary Sources. Noise generated from the proposed project would be limited to those typical of residential uses/neighborhood park. This type of noise is generally described as "nuisance noise." Nuisance noise is intermittent or temporary neighborhood noise from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to other residents. Compliance with the County's noise control ordinance for residential and related land uses would limit exposure to excessive nuisance noise. Similarly, the related projects would be required to comply with the noise standards applicable to the jurisdictions in which they would be located (the Cities of Sierra Madre and Pasadena). Compliance with the County's Noise Control Ordinance would reduce the proposed project's operational noise so that its incremental effect is not cumulatively considerable.

Off-Site Traffic Noise

The proposed project and related projects would generate off-site traffic noise. When calculating future traffic impacts, the traffic data prepared by Fehr & Peers for the proposed project included traffic from the related projects in the future year traffic volumes (Fehr & Peers 2020). Recent pending and approved projects in the project area were included in the traffic model. Thus, the future traffic results with and without the proposed project already account for the cumulative impacts from the list of related projects contributing to traffic increases. Since the noise impacts are generated directly from the traffic analysis results, the Future without Project Noise Level and Future with Project Noise Levels described herein already reflect cumulative impacts. As described herein, the noise level increases associated with both of these scenarios (Future without Project and Future with Project) would generate a noise level increase of 3 dB or less along the studied roadways in the vicinity of the proposed project site. As such, increases would be below the significance threshold of 6 dB (in the City of Sierra Madre) or 5 dB (in the City of Pasadena). With or without the proposed project, traffic noise would not be substantially increased in the project vicinity. As such, the incremental effect of the proposed project on off-site traffic noise is not cumulatively considerable.

5.4.14 Population and Housing

Planned projects identified in Table 5-1 could combine to create substantial population growth in the City. However, as stated in Section 4.14, Population and Housing, construction employment would not induce substantial population growth in the area. In addition, while the project would result in a new residential population to the local and regional area, the housing growth caused by the project falls well within current projections for household growth in the City and Los Angeles County. For these reasons, the proposed project would not induce substantial unplanned population growth, and impacts would be less than significant. Therefore, it is not anticipated that the proposed project, in combination with other future foreseeable projects, would create a cumulatively considerable impact.

5.4.15 Public Services

As detailed in Section 4.15, Public Services, the proposed project would establish the Specific Plan, which would allow for development of a residential community on the currently undeveloped project site. More specifically, the project would allow for construction of new residences as well as a public park to serve City residents; however, the project would not induce substantial unplanned population growth as discussed in Section 4.14, Population and Housing. The proposed project could increase demand for fire and police protection services, as well as generate demand for school, and library facilities.

The proposed project would be subject to the payment of developer fees, which would be used exclusively for future public facility improvements necessary to ensure that the development contributes its fair share of the cost of facilities and equipment determined to be necessary to adequately accommodate new development in the City. The fee amount is determined through evaluation of the need for new public service facilities as it relates to the level of service demanded by new development, which varies in proportion to specific land uses.

Regarding schools, the proposed project would not result in the need for new or physically altered school facilities, and the project would be required to pay school fees pursuant to State Bill (SB) 50, which would constitute full mitigation for any impacts should they occur, impacts related to school facilities would be less than significant. Lastly, implementation of the proposed public park would ensure that impacts to parks are less than significant.

The cumulative projects identified above in Table 5-1 would also be required to contribute a fair share contribution of the cost of facilities and equipment determined to be necessary to adequately accommodate new development in the City based on the projected demand each project would have on public services and facilities. Therefore, since each project would be required to contribute developer fees, or expand or construct new facilities, if determined to be necessary, impacts would not be cumulatively considerable.

5.4.16 Recreation

As stated in Section 4.16, Recreation, the proposed project would not result in the increased demand for or use of existing parks or recreational facilities such that new or physically altered park facilities would be required. The proposed project would be required to provide 0.5 acres of parkland on-site. As mentioned in Section 4.16, the project would include 3.04 acres for a neighborhood public park, which is more than the required amount of parkland, in compliance with the Sierra Madre Municipal Code. Thus, inclusion of the proposed public park would ensure that impacts to parks are less than significant.

Similarly, the cumulative projects identified above in Table 5-1 would be required to provide adequate park space or contribute to a fair share contribution of the cost of facilities based on standards such as the minimum parkland-to-population ratio developed by the City. Impacts associated with the construction and operation of potential new recreational facilities would be analyzed within each cumulative project's CEQA review. As such, since each project would be required to contribute to developer fees, or expand or construct new facilities, if determined to be necessary, impacts would not be cumulatively considerable.

5.4.17 Transportation

As discussed in Section 4.17, Transportation, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. In addition, the proposed project would be screened out using the Low Vehicle Miles Traveled (VMT) Area Screening criteria and can be presumed to have a less than significant VMT impact and would therefore be consistent with CEQA Guidelines Section 15064.3(b). Lastly, the project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) or result in inadequate emergency access. It is anticipated that all cumulative projects included in Table 5-1 would be required to implement mitigation or design features to reduce or avoid potential impacts, if required. In addition, it is anticipated that cumulative projects included in Table 5-1 would implement access and circulation features that would ensure projects would not result in an increase in hazards or inadequate emergency access. Therefore, cumulative impacts related to transportation would not be cumulatively considerable.

5.4.18 Tribal Cultural Resources

As discussed in Section 4.18, Tribal Cultural Resources, ground-disturbing activities associated with construction of the proposed project could result in the unanticipated discovery of previously uncovered tribal cultural resources (TCRs). To mitigate any potential impacts to cultural resources resulting from ground-disturbing activities, **MM-TCR-1** shall be implemented**. MM-TCR-1** requires that a Native American monitor be present during activities interpreted as having the potential to encounter unknown TCRs, to ensure impacts would be less than significant. The majority of cumulative projects in the area have centered on residential development, although one commercial building expansion is included as well (see Table 5-1). These projects would have the same potential as the proposed project to impact previously uncovered TCRs during ground disturbing activities

associated with construction. Compliance with Assembly Bill 52, which requires consultation with tribes that have a cultural affiliation to the project site and surrounding area, would also be required for future development project. As such, cumulative projects would be required to implement similar mitigation measures as the proposed project to reduce potential impact to TCRs. When considered with other foreseeable projects, cumulative impacts to cultural resources would not be cumulatively considerable. Therefore, the project would not result in a cumulatively considerable contribution to TCRs impacts.

5.4.19 Utilities and Service Systems

Cumulative impacts to utilities and services systems would result when projects combine to increase demand for utilities and service systems such that additional facilities must be provided or expanded. This would usually result from incremental addition of people occupying an area or incremental construction of new or larger buildings requiring public services provision. As discussed in Section 4.19, Utilities and Services Systems, with implementation of utility infrastructure associated with the project, the proposed project would not result in relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities or expansion of existing facilities. Considering existing and estimated future water demand, as described in the City's 2020 Urban Water Management Plan, it is reasonably foreseeable that the City would have sufficient supplies to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years. In addition, to achieve a net-zero impact on local water supplies, the project applicant will provide funds to the City to purchase supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD) in an amount equal to the anticipated total indoor and outdoor water demand of each residential unit over a 50-year period. (see **PDF-UTL-1** in see Table 3-2, Project Design Features, in Chapter 3). This purchase would be in addition to the City's existing agreement with SGVMWD providing for the purchase of supplemental imported water. Further, the project site would be redeveloped in compliance with the California Green Building Code (which implements water efficiency standards for appliances and fixtures), which would further reduce project water usage; thus, water demand as a result of the project would be minimal. While the City is a built-out community with just a handful of vacant parcels, any cumulative projects in the surrounding area would be developed with the same building standards to optimize water efficiency. In addition, adequate wastewater treatment would be available to serve the proposed project and cumulative projects.

Lastly, solid waste generated under the proposed project would not exceed state or local standards, or capacity of local infrastructure. Cumulative projects would be required to perform similar analyses, in accordance with CEQA, to ensure projects would have sufficient utilities. Solid waste management services for the City are provided by Athens Services. For residential customers, Athens Services provides a three-can system to separate waste from recyclable material and organic material. The City is a member of the Scholl Canyon Watershed, so the refuse produced by the City is taken to Scholl Canyon Landfill. Total permitted capacity at the Scholl Canyon Landfill is approximately 58.9 million tons, and the landfill has a remaining capacity of approximately 17%, or 9.9 million tons (CalRecycle 2019). As such, the available capacity of the landfill would be able to accommodate the project and cumulative projects. The waste collection procedures and programs for all planned and proposed developments would be required to comply with the municipal requirements for recycling and collection of solid waste. All planned and proposed projects would be required to be consistent with all applicable statutes and regulations, and would therefore not have cumulatively considerable impacts with respect to solid waste collection and management.

5.4.20 Wildfire

With regard to wildfire hazards, as discussed in Section 4.20, Wildfire, the project site is located within a wildland-urban interface (WUI) location that is in an area statutorily designated Local Responsibility Area VHFHSZ by CAL FIRE and the Sierra Madre Fire Department (Appendix F2). Additionally, as seen in Figure 3-1, Fire Hazard Severity Zone Map, of the General Plan, the project site is designated by the City as a Very High Hazard area (City of Sierra Madre 2015). However, the project would be required to comply with requirements such as the Sierra Madre Municipal Code and the FPP prepared for the project (Appendix F2), as outlined in **PDF-WF-1** (see Table 3-2, Project Design Features, in Chapter 3, Section 4.9, Hazards and Hazardous Materials, and Section 4.20, Wildfire). Per Chapter 17.52 of the Sierra Madre Municipal Code, the City shall incorporate fire prevention and landscaping standards. As stated in the FPP, a Fuel Modification Area would be implemented, that would take advantage of the project's setting and design layout. Vegetation management, including the assessment of fuel condition and removal of dead and dying and undesirable species, as well as thinning as necessary to maintain specified plant spacing and fuel densities, shall be completed annually each year, and more often as needed for fire safety, as determined by the Sierra Madre Fire Department. Cumulative projects would be required to also prepare FPPs, to evaluate and identify potential fire risks associated with the project. As such, through compliance with existing regulations and similar project design features, as applicable, cumulative impacts to wildfire would not be cumulatively considerable.

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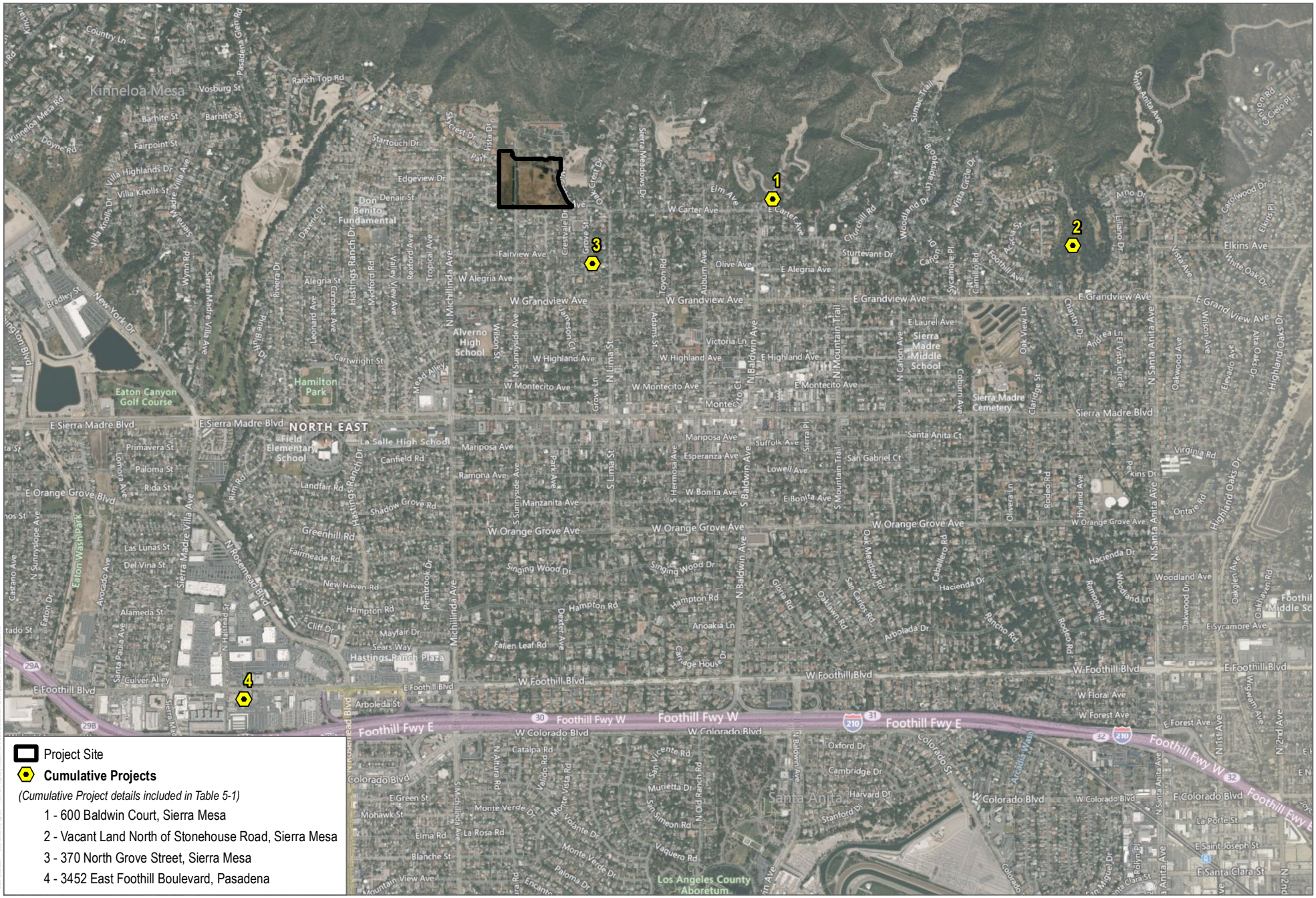

SOURCE: County of Los Angeles 2020; Bing Maps

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FIGURE 5-1

Cumulative Projects

The Meadows at Bailey Canyon EIR

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6 Growth Inducement

Section 15126.2(e) of the California Environmental Quality Act (CEQA) Guidelines requires a discussion of how the potential growth-inducing impacts of the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Induced growth is distinguished from the direct employment, population, or housing growth of a project (14 CCR Section 15000 et seq.). If a project has characteristics that "may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively," then these aspects of the project must be discussed as well. Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place in the absence of the proposed project. Typically, the growth-inducing potential of a project would be considered significant if it stimulates population growth or a population concentration above what is assumed in local and regional land use plans, or in projections made by regional planning authorities, such as the Southern California Association of Governments (SCAG).

The CEQA Guidelines also indicate that growth should not be assumed to be either beneficial or detrimental (14 CCR Section 15126.2[d]). According to Section 15126.2(e) of the CEQA Guidelines, a project is defined as growth inducing when it directly or indirectly:

1. Fosters population growth;
2. Fosters economic growth;
3. Includes the construction of additional housing in the surrounding environment;
4. Removes obstacles to population growth;
5. Taxes existing community service facilities, requiring construction of new facilities that could cause significant environmental effects; and/or
6. Encourages or facilitates other activities that could significantly affect the environments, either individually or cumulatively.

6.1 Growth Inducement Due to Population Growth

As discussed in Section 4.14, Population and Housing, of this Environmental Impact Report (EIR), The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) would directly contribute to population growth in the City of Sierra Madre (City). The proposed project would allow for the development of 42 detached single-family homes. The proposed project would directly contribute to population growth in the area through the development of these dwelling units. According to SCAG's Connect SoCal Program EIR, the average household size in the SCAG region was 3.2 persons per household in 2018 (SCAG 2019). Using the 2018 average as a guide, 3.2 persons per household for the project's proposed 42 residential units could result in a residential population of approximately 134 persons. The project site currently has a zoning and land use designation of Institutional Land, which allows for public and private uses which provide public services to the community, including communal residential facilities, churches, museums, and schools (City of Sierra Madre 2015, 2017). The General Plan and Zoning Code amendments would change this land use designation to Specific Plan, which would allow for low-density residential and open space uses on the project site. As such, the proposed project could result in unplanned population growth due to the change in land use compared to some land uses allowed under the Institutional zoning and land use designation. However, as discussed in Section 4.14, SCAG has projected that the City will undergo an increase of 300 people from 2016 to 2045. The population growth anticipated to occur as a result of the project (134 residents) represents 45% of the City's projected population

growth for 2016 to 2045, and 0.008% of the County's projected population growth in the same time period. Therefore, the project would contribute to and is projected to be within the anticipated population growth for the City, nor would it exceed the population growth projections for the surrounding County. Although the proposed project would result in greater population inducement, development of the uses allowed under the proposed project would be under the City's growth projections.

Overall, the project would directly stimulate population growth through the addition of new residents. However, the growth would be consistent with household growth envisioned in local and regional land use plans and in projections made by regional planning authorities, since the planned growth of the project site and its land use intensity have been factored into the underlying growth projections of the SCAG's Connect SoCal, also known as the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (SCAG 2020a).

6.2 Growth Inducement Due to Economic Growth

An increase in population would foster economic growth by increasing demand for regional and local goods and services. It is expected that future residents would demand a variety of goods and services from the existing and future commercial uses within the surrounding area. The proposed project would not provide services on site and therefore would not generate direct employment opportunities for residents. As the project proposes to allow for the development of 42 residences, a dedicated neighborhood park, and open space, the project is not expected to result in substantial growth inducement associated with economic growth.

6.3 Growth Inducement Due to Additional Housing

The proposed project would establish The Meadows at Bailey Canyon Specific Plan (Specific Plan), which would establish the zoning and development standards to guide future development of 42 detached single-family residential units and an approximately 3.04-acre dedicated neighborhood park, within the 17.30-acre project site. As such, the project would propose new housing and therefore result in a direct increase in population. According to SCAG's Connect SoCal Program EIR, the average household size in the SCAG region was 3.2 persons per household in 2018 (SCAG 2019). Using the 2018 average as a guide, 3.2 persons per household for the project's proposed 42 residential units could result in a residential population of approximately 134 persons. As discussed in Section 4.14, Population and Housing, of this EIR, the project is not expected to result in household growth above the City's General Plan forecasts. According to SCAG, the City is anticipated to increase from 4,800 households in 2016 to 5,000 households in 2045, an increase of 200 households. Based on SCAG's growth projections for housing, the project's 42 dwelling units would represent 21% of the 200 households projected to be added to the City between 2016 and 2045.

As discussed in Section 4.14, Population and Housing, SCAG recently completed developing the 6th Cycle Regional Housing Needs Assessment (RHNA) allocation plan, which was approved in March 2021, and will be in effect from 2021 through 2029. The 6th Cycle RHNA states that the allocation for the City is 204 housing units (SCAG 2021). As discussed in Chapter 3, Project Description, of this EIR, the project's anticipated construction schedule is anticipated to conclude in May 2025, which would result in the anticipated housing growth to be accounted for in the City's 6th Cycle RHNA allocation. Therefore, the project would not stimulate housing growth above what is assumed in local and regional land use plans, or in projections made by regional planning authorities.

6.4 Growth Inducement Due to Removal of Obstacles

Indirect growth can also occur by a project installing infrastructure that can support further growth. The surrounding area is developed and supported by existing road and utility infrastructure. The project would include connections to existing utilities and infrastructure and would not result in the extension of infrastructure or roads into an undeveloped area leading to substantial population growth. Therefore, indirect growth inducement as a result of the extension of these facilities into a new area would not occur.

Improvements to transportation, utilities, and public service infrastructure as part of the proposed project would accommodate the direct growth induced by the proposed project. These improvements would not open up new areas to development because they would connect to existing transportation and utility infrastructure (including water and sewer) adjacent to the project site. Furthermore, these improvements would provide access and utility service solely to the proposed project. Areas of the project site outside of the development area would remain as under existing conditions. Therefore, the project site would not be capable of supporting future development due to these transportation and utility improvements.

The proposed project would also include a storm drain system which would be designed to address peak flows and to integrate water quality features needed to comply with the requirements for water quality under Title 7 (Stormwater Pollutant Elimination) of the Sierra Madre Municipal Code. The project proposes the creation of two independent storm drain pipe networks that convey site runoff to the Municipal Separate Storm Sewer System. One network is proposed on the western portion of the site and consists of a new storm drain which would run north south and join an existing storm drain at North Sunnyside Avenue. The second proposed storm drain network would be constructed under Carter Avenue on the site's eastern edge. This network would capture sheet flow from the project site to a proposed detention basin before being discharged into the City's stormwater system. As such, the proposed storm drain system would accommodate the proposed project and would not be capable of supporting future growth or development.

Public services such as schools, police, and fire services would be provided by existing and planned surrounding facilities. As discussed above and in Section 4.15, Public Services, of this EIR, payment of developer fees would ensure the proposed project would not significantly impact public services and facilities. Additionally, as discussed in Section 4.16, Recreation, of this EIR, the proposed project would include a 3.04-acre neighborhood public park, in compliance with Title 16 (Subdivision), Chapter 16.44 (Regulations for Dedication of Land for Park and Recreation Land) of the Sierra Madre Municipal Code, to fulfill parkland obligation requirements for population induced by the proposed project and ensure the proposed project would not significantly impact parks and recreational facilities.

The proposed project would not provide surplus infrastructure capacity that would induce growth in surrounding areas, but would, rather, accommodate the proposed project during operations. Therefore, the proposed project would not result in growth inducement due to the removal of obstacles.

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7 Significant Irreverisble Changes

The California Environmental Quality Act (CEQA) Guidelines (14 CCR Section 15000 et seq.) require an Environmental Impact Report (EIR) to address any significant irreversible environmental changes that would result from a project should it be implemented. Pursuant to Section 15126.2(d) of the CEQA Guidelines, significant irreversible environmental impacts could involve any of the following:

- Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely.
- The primary and secondary impacts of the project would generally commit future generations of people to similar uses.
- Irreversible damage from environmental accidents associated with the project.
- The proposed consumption of resources is not justified (e.g., the project results in wasteful use of energy).

Determining whether a project could result in significant and irreversible effects requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them.

Implementation of The Meadows at Bailey Canyon Specific Plan Project (project or proposed project) would involve consumption of limited, slowly renewable, and non-renewable resources. This consumption would occur during the construction phase of the project and would continue throughout its operational lifetime. The project would require a commitment of resources that would include building materials, fuel and operational materials/resources, and the transportation of goods and people to and from the project site.

Construction of the project would require the consumption of resources that are not renewable or that may renew so slowly as to be considered non-renewable. These resources would include the following construction supplies: certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel, and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; water; and fossil fuels such as gasoline and oil.

The resources that would be committed during operation of the project would include water for potable uses (personal and household consumption) and landscape irrigation, and fossil fuels for electricity, natural gas, and transportation. Fossil fuels would represent the primary energy source associated with construction and ongoing operation of the project, and the existing, finite supplies of these natural resources would be incrementally reduced. However, as discussed in Section 4.6, Energy, of this EIR, the project would result in less-than-significant impacts related to the potential wasteful, inefficient, or unnecessary consumption of energy resources during project construction and operation.

Additionally, the project would involve an unquantifiable, but limited, use of potentially hazardous materials typical of residential uses, including cleaning solvents and fertilizers and pesticides for landscaping. These materials would be contained, stored, and used on site in accordance with manufacturers' instructions and applicable standards and regulations. Compliance with regulations would serve to protect against a significant and irreversible environmental change that could result from the accidental release of hazardous materials.

Furthermore, the project would result in direct permanent impacts to nesting bird habitats and protected trees. Permanent project impacts would consist of vegetation clearing, grading, and residential development, including houses, parks and open space, and roadways. Permanent impacts to nesting bird habitats and protected trees would be considered potentially significant under CEQA and would require implementation of mitigation measures, as outlined in Section 4.4, Biological Resources, to reduce impacts to a level below significance.

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8 Alternatives

8.1 Introduction

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Environmental Impact Reports (EIRs) are required to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (14 CCR Section 15126.6[a]). This EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR Section 15126.6[a]). The alternatives discussion is required even if these alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR Section 15126.6[b]).

The inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision maker for a given project who must make the necessary findings addressing the potential feasibility of reducing the severity of significant environmental effects (California Public Resources Code, Section 21081; see also 14 CCR Section 15091).

8.2 Project Objectives

Following are the objectives of the proposed The Meadows at Bailey Canyon Specific Plan (project or proposed project):

1. Provide for orderly planning and long-range development of the project site to ensure community compatibility with the distinctive small-town character unique to the Sierra Madre community through adoption of a specific plan that establishes zoning and development standards.
2. Ensure new uses are compatible with the existing community by establishing comprehensive development standards and architectural guidelines through adoption of a specific plan that will guide future development.
3. Provide above-moderate income housing, in accordance with the 6th Cycle Regional Housing Needs Assessment (RHNA).
4. Develop a high-quality single-family residential community that is sensitively sited within the existing natural topography of the site and its surroundings and serves to minimize traffic impacts to adjacent streets.
5. Preserve the hillside open space area by dedicating approximately 35 acres north of the Mater Dolorosa Retreat Center to the City, in order to preserve a portion of Colby Canyon and the Colby Canyon Trail, which would be used by wildlife for movement up and down slope; preserve native vegetation communities and drainages; and preserve land adjacent to the Colby Canyon stream.
6. Provide street improvements to facilitate safe and efficient access to the site from North Sunnyside Avenue.
7. Achieve a net-zero impact on local water supplies to minimize burdens on existing City infrastructure and the impact on the environment.
8. Provide public benefits and amenities to the neighboring community, through a development agreement with the City, including a neighborhood public park and enhanced connectivity to the Bailey Canyon Wilderness Park and trail system

8.3 Significant Impacts

As discussed throughout Chapter 4, Environmental Analysis, of this EIR, implementation of the proposed project would not result in any significant and unavoidable impacts on the environment. Prior to mitigation, the proposed project would result in potentially significant impacts related to biological resources, cultural resources, geology and soils, land use and planning, and noise. However, with implementation of mitigation measures provided in Table ES-1, Summary of Project Impacts, of Chapter ES, Executive Summary, all potentially significant impacts would be mitigated to below a level of significance.

8.4 Alternatives Considered but Rejected

State CEQA Guidelines Section 15126.6(c) provides guidance in selecting a range of reasonable alternatives for the project. The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts. State CEQA Guidelines Section 15126.6(c) provides the following guidance in selecting a range of reasonable alternatives for the project. There are many factors that may be taken into account when addressing the feasibility of range of potential alternatives for the project, such as 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). The alternatives discussion shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

The EIR need not discuss every alternative to the project. A range of alternatives that are "reasonable" for analysis have been evaluated and are discussed below in Section 8.5, Alternatives Under Consideration. The following describes other alternatives considered by the City of Sierra Madre (City) but dismissed from further evaluation in this EIR, and a brief description of the reasons for their rejection.

8.4.1 Alternative Location

Pursuant to Section 15126.6(f)(2) of the CEQA Guidelines, the City considered the potential for alternative locations to the project. The City is mostly developed, with the exception of the San Gabriel Mountains located within the northern portion. Therefore, there are very limited areas of approximately equivalent size to the project site that could be developed or redeveloped with a residential project. In addition, the project applicant does not control another site within the City of comparable land area that is available for development of the proposed project. One of the factors for feasibility of an alternative is "whether the proponent can reasonably acquire, control or otherwise have access to the alternative site." Because the City is highly urbanized and is largely built out, obtaining another site of a similar size in a similar location is not considered feasible. It should also be noted that the project site is surrounded on all sides by development. As such, an alternative location was ultimately rejected from further analysis in the EIR.

8.4.2 Reduced Intensity Institutional

The City also considered a reduced intensity alternative that would be consistent with the existing Institutional zoning and General Plan land use designation of the project site. More specifically, this assumes development of a communal residential facility, including group homes, developmentally disabled, or senior care facilities, consistent with the existing Institutional zoning and General Plan land use designation of the project site, but at a reduced development intensity. Per CEQA Section 15126.6(f)(1), among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability and economic viability. Due to the decreased intensity associated with this alternative, it is not reasonably foreseeable that a future applicant will develop the project site at this scale, or that development at a reduced intensity would be economically viable for future development of the site. More importantly, however, one of the purposes of an alternatives analysis is to identify alternatives that could avoid or substantially lessen one or more of the significant effects of the project. The EIR considers two alternatives that are similar to the Reduced Intensity Institutional alternative suggested. The EIR analyzes two alternatives: Alternative 2, Existing Zoning and Land Use Designation; Communal Residential Facility; and Alternative 3, Existing Zoning and Land Use Designation: Private School – albeit at greater intensity of development (see Table 8-1, below). With respect to being capable of substantially lessening the significant impacts of the project, neither Alternative 2 nor Alternative 3 would avoid or substantially lessen the significant impacts of the project, and both would create new and greater impacts in some areas, such as aesthetics, recreation, greenhouse gas emissions, and transportation, as compared to the proposed project. While a reduced intensity alternative would reduce these impacts, there is nothing to indicate that it would avoid or substantially lessen the significant impacts of the proposed project or would be substantially different in terms of impacts as compared to the alternatives already addressed in this section. In conclusion, because the reduced intensity institutional alternative would not substantially lessen one or more of the significant effects of the project, as compared to the alternatives included in this section, which have been analyzed in detail below, a reduced intensity institutional alternative was ultimately rejected from further analysis in the EIR.

8.5 Alternatives Under Consideration

Section 15126.6 of the CEQA Guidelines states that the EIR shall "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

The range of alternatives evaluated in an EIR is governed by the "rule of reason" that requires the EIR set forth only those alternatives necessary to permit a reasoned choice. An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative (Section 15126.6[a] of the CEQA Guidelines).

In developing the alternatives to be addressed in this EIR, the potential alternatives were evaluated in terms of their ability to meet the basic objectives of the project, while reducing or avoiding the environmental impacts of the project identified in Chapter 4, Environmental Analysis, of this EIR.

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in California Code of Regulations (CCR) Section15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives,

the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, the Sierra Madre City Council (see PRC Section 21081[a][3]).

This chapter discusses alternatives to the proposed project, including the No Project/No Build Alternative. The No Project/No Build Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. The alternatives addressed in this chapter are listed below, followed by a more detailed discussion of each:

1. Alternative 1: No Project/No Build Alternative
2. Alternative 2: Existing Zoning and Land Use Designation: Communal Residential Facility Alternative
3. Alternative 3: Existing Zoning and Land Use Designation: Private School Alternative
4. Alternative 4: Reduced Development Alternative

8.6 Alternatives Impact Summary

8.6.1 Alternative 1: No Project/No Build Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project/No Build Alternative (Alternative 1) to be analyzed. Under Alternative 1, no development would occur on the project site. Accordingly, the site characteristics of this alternative would be equivalent to the existing conditions for each category analyzed in Chapter 4, Environmental Analysis, of this EIR.

Comparison to Proposed Project

Aesthetics

Alternative 1 would not result in any changes to the existing visual character, views, or lighting and glare. The site would remain as undeveloped land. Although the proposed project would result in less-than-significant impacts associated with aesthetics, no impacts would occur under Alternative 1 because no development would occur on the project site. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Agriculture and Forestry Resources

Alternative 1 would not result in any development on the project site and the site would remain as undeveloped land. However, no important farmland, land zoned for agriculture, forest land, or timber land exists on the project site. As such, the proposed project would result in no impacts to agriculture and forestry resources. Alternative 1 would also result in no impacts to agriculture and forestry resources because no development would occur. Therefore, impacts would be similar to the proposed project under Alternative 1.

Air Quality

There would be no direct construction or operational air quality impacts associated with Alternative 1, since the site would remain in its current, undeveloped state and no construction would occur. Although the proposed project would result in less-than-significant impacts associated with air quality, no impacts would occur under Alternative 1 because no development would occur on the project site. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Biological Resources

Alternative 1 would not result in any changes to the currently undeveloped project site. The site would remain zoned and designated Institutional and undeveloped. Therefore, Alternative 1 would not result in any impacts to biological resources. In contrast, the proposed project would result in potentially significant impacts to protected trees and nesting birds if vegetation clearing is undertaken during the breeding season. Although the proposed project would mitigate impacts to biological resources to less than significant, no construction including vegetation clearing would occur under Alternative 1. Therefore, the project's already less-than-significant impacts would be avoided under Alternative 1.

Cultural Resources

Alternative 1 would not result in excavation of soils that may contain significant cultural resources; therefore, the project's already less-than-significant impacts to cultural resources would be reduced under Alternative 1.

Energy

Alternative 1 would not result in the use of energy as no changes to the currently undeveloped project site would occur. Although the proposed project would result in less-than-significant impacts associated with energy, including the wasteful, inefficient, or unnecessary consumption of energy resources, no impacts would occur under Alternative 1 because no energy consumption would occur. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Geology and Soils

Alternative 1 would not result in any changes to the currently undeveloped project site. Although the proposed project would result in less-than-significant impacts with mitigation associated with geologic hazards, Alternative 1 would not exacerbate the potential for geologic hazards on the project site so no impacts would occur. Additionally, as compared to the proposed project, Alternative 1 would not result in excavation of soils that may contain significant paleontological resources. Therefore, the project's impacts to geology and soils and paleontological resources, impacts would be reduced under Alternative 1.

Greenhouse Gas Emissions

There would be no direct construction or operational greenhouse gas emission impacts associated with Alternative 1 since the site would remain in its current state and no development would occur. Although the proposed project would result in less-than-significant impacts associated with greenhouse gas emissions, no impacts would occur under Alternative 1 because no development would occur on the project site. Therefore, the project's already less than significant impacts would be reduced under Alternative 1.

Hazards and Hazardous Materials

As no construction would occur, Alternative 1 would not result in any potential impacts associated with hazards or hazardous materials. Compared to the proposed project, Alternative 1 would not introduce future residents to potential hazards or hazardous materials during operation, including wildfires, because no development would occur. Therefore, although impacts to hazards and hazardous materials would be less than significant under the proposed project, impacts associated with hazards and hazardous materials, including wildfire hazards, would be reduced under Alternative 1.

Hydrology and Water Quality

Alternative 1 would not result in any direct impacts related to hydrology or water quality since no construction would occur and there would be no increase in runoff from the site. No construction or development activities would take place that could generate potential pollutants. Although the proposed project would result in less-than-significant impacts associated with hydrology and water quality, no impacts would occur under Alternative 1. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Land Use and Planning

No changes to the existing zoning or land use designations would occur under Alternative 1 as the project site would remain undeveloped. Although, with implementation of Mitigation Measure **(MM-)BIO-3,** the proposed project would result in less-than-significant impacts associated with land use and planning, Alternative 1 would not require amendments to the zoning code or General Plan and no impacts would occur under Alternative 1. Therefore, the project's impacts would be reduced under the Alternative 1.

Mineral Resources

Alternative 1 would not result in any development on the project site and the site would remain as undeveloped land. There are no known or locally important mineral resources existing on the project site and the proposed project would result in less-than-significant impacts to mineral resources. Alternative 1 would result in no impacts to mineral resources because no development would occur. Therefore, the project's already less-than-significant impacts would be slightly reduced under Alternative 1.

Noise

Alternative 1 would not result in any construction-related noise since no construction would occur. Additionally, Alternative 1 would not contribute to an increase in ambient noise levels as no development would be introduced on the project site. Although the proposed project would mitigate all noise impacts to less than significant, no impacts would occur under Alternative 1. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Population and Housing

No impacts related to population growth would occur under Alternative 1 because the project site would remain undeveloped. No residential or economic growth would occur, and no infrastructure would be developed on the project site, which could induce population growth on the site. Although the proposed project would include new residential, directly inducing population growth on the project site, the proposed project would result in less-than-significant impacts associated with population and housing. However, due to no construction, no impacts to population and housing would occur under Alternative 1. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Public Services

Under Alternative 1, there would be no increase in demand for public services, as would occur under the proposed project. Therefore, although the proposed project would result in less-than-significant impacts associated with public services, impacts to public services would be reduced under Alternative 1.

Recreation

Under Alternative 1, there would be no increase in demand for parks and recreation facilities or the development of new or expanded parks and recreation facilities, as would occur under the proposed project. Therefore, although the proposed project would result in less-than-significant impacts associated with recreation, impacts associated with recreation would be reduced under Alternative 1.

Transportation

Alternative 1 would not generate any new traffic that would affect the local roadway network or result in an increase in vehicle miles traveled (VMT). Although transportation impacts would be less than significant under the proposed project, no transportation impacts would occur under Alternative 1. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 1.

Tribal Cultural Resources

Alternative 1 would not result in excavation of soils that may contain significant tribal cultural resources. Although impacts to tribal cultural resources would be less than significant under the proposed project, no impacts to tribal cultural resources would occur under Alternative 1. Therefore, the project's already less-than-significant impacts to tribal cultural resources would be reduced under Alternative 1.

Utilities and Service Systems

Under Alternative 1, there would be no increase in demand for public utilities and service systems. Although impacts to public utilities and service systems would be less than significant under the proposed project, no impacts to public utilities and service systems would occur under Alternative 1. Therefore, the project's already less-than-significant impacts to public utilities and service systems would be reduced under Alternative 1.

Wildfire

As no construction would occur, Alternative 1 would not result in any potential impacts associated with wildfire hazards. Compared to the proposed project, Alternative 1 would not introduce future residents to potential wildfires hazards, because no development would occur. Therefore, the project's already less-than-significant impacts associated with wildfire hazards would be reduced under Alternative 1.

Relation to Project Objectives

Alternative 1 would not meet any of the project objectives.

8.6.2 Alternative 2: Existing Zoning and Land Use Designation: Communal Residential Facility Alternative

The Existing Zoning and Land Use Designation: Communal Residential Facility Alternative (Alternative 2) assumes development of group homes, developmentally disabled, or senior care facilities, consistent with the existing Institutional zoning and General Plan land use designation of the project site. Therefore, no rezone or General Plan Amendment would be required under this alternative. Alternative 2 would be developed on the same approximately 17.30-acre project site as the proposed project. Based on the 35% maximum lot coverage required by the zoning code, the maximum allowable footprint based on existing zoning would allow for development of approximately

275,000 square feet. This alternative would not include a publicly accessible neighborhood park, which is a component of the proposed project. Carter Avenue would be improved similar to the proposed project and would be used as secondary egress and ingress access to the site. North Sunnyside Avenue would remain a private street under this alternative.

Comparison to Proposed Project

Aesthetics

Alternative 2 would result in development of a communal residential facility consistent with the existing Institutional zoning and General Plan land use designation of the project site. However, development of a communal living facility would introduce greater bulk and scale associated with the facility buildings, which would be larger than the individual residential houses associated with the proposed project. No neighborhood park would be developed along the southernmost portion of the project site. Thus, Alternative 2 would be more visible from the south than the proposed project as there would be no public park to provide visual screening. Although the communal living facility would introduce greater bulk and scale than the proposed project, the San Gabriel Mountains would still be substantially greater in elevation than buildings associated with Alternative 2 and views of the mountains would not be obstructed from south of the project site, similar to the proposed project. However, views of the project site from the trails within the San Gabriel Mountains and from Bailey Canyon would appear less congruent with the surrounding land uses under Alternative 2, as the communal living facility would be more distinguishable from the surrounding residential land uses than the proposed project. As such, scenic views from the San Gabriel Mountains would be more impacted under Alternative 2.

Alternative 2 would also introduce new sources of lighting and glare to the currently undeveloped project site. This alternative would be required to comply with applicable rules and regulations concerning lighting, glare, and scenic quality, including project design feature **(PDF)-AES-1** and **PDF-AES-2**, similar to the proposed project. Finally, due to the same location of the project site as the proposed project, this alternative would not impact a state scenic highway because none are located in the vicinity of the project site. Therefore, due to the greater bulk and scale of Alternative 2 and no screening provided by inclusion of a neighborhood park, impacts related to aesthetics would be greater as compared to the proposed project.

Agriculture and Forestry Resources

Alternative 2 would still result in new development on the currently undeveloped project site. However, no important farmland, land zoned for agriculture, forest land, or timber land exists on the project site. As such, similar to the proposed project, Alternative 2 would also result in no impacts to agriculture and forestry resources. Therefore, impacts would be similar to the proposed project under Alternative 2.

Air Quality

California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2 was used to estimate air quality emissions for construction and operation of Alternative 2. According to CalEEMod estimates, Alternative 2 would result in greater construction and operational emissions of criteria air pollutants than the proposed project, and specifically would exceed the South Coast Air Quality Management District (SCAQMD) threshold for volatile organic compound (VOC) emissions during both construction and operation. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot communal living facility would result in 86.36 pounds per day of VOC emissions during construction and 79.74 pounds per day of VOC emissions during operation. By comparison, the proposed project would result in 54.40 pounds per day of VOC emissions during construction and 15.20 pounds

per day of VOC emissions during operation. The proposed project would not exceed SCAQMD thresholds for any criteria air pollutants and would result in less than significant air quality impacts. However, construction activities would generate emissions in excess of site-specific localized significance thresholds for fine particulate matter 10 microns in diameter (PM_{10}) and fine particulate matter 2.5 microns in diameter ($PM_{2.5}$); therefore, localized construction impacts during construction of the project would be potentially significant. **MM-AQ-1** would be required to reduce impacts to less than significant. However, as shown in the calculations above, development of a communal living facility under Alternative 2 would result in greater emissions of criteria air pollutants and a potentially significant impact related to construction and operational VOC emissions. As such, Alternative 2 would result in greater air quality impacts compared to the proposed project, and would require mitigation to reduce impacts to less than significant, if such mitigation were feasible. If mitigation were not feasible, impacts would be significant and unavoidable.

Biological Resources

Alternative 2 would result in a similar development footprint as the proposed project. As such, Alternative 2 would still result in new development on the project site, which would impact protected trees and could impact nesting birds if vegetation clearing occurred during breeding season, similar to the proposed project. Alternative 2 would result in the same impacts to biological resources as the proposed project and would require similar mitigation for nesting bird avoidance and protected tree replacement. Therefore, impacts would be similar to the proposed project under Alternative 2.

Cultural Resources

Alternative 2 would result in new development on the currently undeveloped project site. As such, the potential to impact archaeological resources or human remains would still remain and the same mitigation would be required for Alternative 2 as the proposed project. Therefore, impacts would be similar to the proposed project under Alternative 2.

Energy

Alternative 2 would increase demand for energy on the project site, similar to the proposed project. The proposed project would result in electricity usage of 344,748 kilowatt-hours per year (Appendix B). In addition, the proposed project would result in natural gas usage of 1,153,930 kilo-British Thermal Units per year (Appendix B). CalEEMod User's Guide Version 2016.3.2 was used to estimate energy usage associated with this alternative. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot communal living facility would result in electricity usage of 1,113,205 kilowatt-hours per year and natural gas usage of 3,683,950 kilo-British Thermal Units per year (CAPCOA 2017). Therefore, impacts related to energy usage would be increased under Alternative 2.

Geology and Soils

Alternative 2 would introduce new development to the project site associated with the communal living facility. The proposed project would result in less-than-significant impacts to geology and soils, with implementation of **PDF-GEO-1** through **PDF-GEO-15**, as well as **MM-GEO-1** and **MM-GEO-2**. Alternative 2 would result in similar impacts associated with geologic hazards because this alternative would be developed on the same site as the project and construction of Alternative 2 would be required to comply with the same existing regulations and similar mitigation measures and PDFs. Alternative 2 still has the potential to impact paleontological resources because ground disturbing activities associated with construction would still occur. As such, Alternative 2 would require the same

mitigation as the proposed project for potential impacts related geology and soils and inadvertent disturbance of paleontological resources. Therefore, compared to the proposed project, the Alternative 2 would result in similar impacts as the proposed project regarding geology and soils.

Greenhouse Gas Emissions

CalEEMod User's Guide Version 2016.3.2 was used to estimate greenhouse gas emissions for construction and operation of Alternative 2. According to CalEEMod estimates, Alternative 2 would result in slightly less greenhouse gas emissions than the proposed project during construction. However, Alternative 2 would also result in significantly greater operational greenhouse gas emissions than the proposed project. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot communal living facility would result in 27.76 metric tons of carbon dioxide equivalent (MT CO_2e) per year during construction and 1859.98 MT CO_2e per year during operation. By comparison, the proposed project would result in 36.91 MT CO_2e per year during construction and 791.88 MT CO_2e per year during operation. Neither the proposed project nor Alternative 2 would exceed the significance thresholds for greenhouse gas emissions. However, since operational emissions are significantly greater under Alternative 2 and would be long-term, impacts would be greater under Alternative 2 as compared with the proposed project.

Hazards and Hazardous Materials

The proposed project would result in less-than-significant impacts associated with hazards and hazardous materials, including wildfire hazards. Under the Alternative 2, the potential for hazards and hazardous materials related impacts on the project site would be similar to the proposed project as the location would remain the same. These would include potential impacts associated with previous agricultural uses on the project site and existence of a former underground storage tank north of the northeast corner of the project site. However, both of these conditions were determined to result in less-than-significant impacts through preparation of the Phase I and II Environmental Site Assessment (ESA) for the proposed project, included as Appendix F1. Additionally, although the land use type would be different under Alternative 2, hazardous materials used for operation of the communal living facility would consist of consumer products such as household cleaning products, landscaping chemicals and fertilizers, and other commonly used hazardous substances similar to the proposed project. However, landscaping chemicals and fertilizers associated with maintenance of the neighborhood park would not be required under Alternative 2 because no public park would be included under this alternative.

Similar to the proposed project, Alternative 2 would also introduce people and structures to the project site, which is within a Very High Fire Hazard Severity Zone (VHFHSZ). However, Alternative 2 would also be required to prepare a Fire Protection Plan (FPP) due to the site's location within a VHFHSZ and would be required to comply with existing regulations related to fire protection, similar to the proposed project. Therefore, the Alternative 2 would result in similar impacts as the proposed project regarding hazards and hazardous materials.

Hydrology and Water Quality

The proposed project would have less-than-significant impacts related to hydrology and water quality on the project site. Alternative 2 would result in a similar footprint as the proposed project. As such, the potential for hydrology and water quality related impacts on the project site would be the same as the proposed project. However, this alternative would still require similar development permits as the proposed project, preparation of a Stormwater Pollution Prevention Plan (SWPPP), and incorporation of best management practices, due to the introduction of new

development to an undeveloped site. When compared to the proposed project, the Alternative 2 would result in similar impacts to hydrology and water quality.

Land Use and Planning

Under Alternative 2, there would be no amendments to the zoning code or General Plan as this alternative would comply with the existing Institutional zoning and land use designation. However, with implementation of **MM-BIO-3,** the proposed project would not result in any environmental impacts due to conflicts with relevant plans, policies, or regulations, including the zoning code and General Plan which would be amended concurrently with approval of the proposed project, if approved. Although Alternative 2 would not require the same discretionary actions as the proposed project including amendments to the zoning code and General Plan, with implementation of **MM-BIO-3,** the inclusion of these discretionary actions under the proposed project would not result in any land use and planning impacts. It is anticipated that Alternative 2 would also result in removal of trees and thus implementation of **MM-BIO-3** would still be required. Therefore, Alternative 2 would result in similar impact as the proposed project.

Mineral Resources

Alternative 2 would still result in new development on the currently undeveloped project site. However, the project site is located in areas of undetermined mineral resource significance and there are no locally important mineral resource recovery sites in the City. As such, similar to the proposed project, Alternative 2 would also result in less-than-significant impacts to mineral resources. Therefore, impacts would be similar to the proposed project under Alternative 2.

Noise

Similar to the proposed project, Alternative 2 would also result in construction activities on the currently undeveloped project site that would result in potentially significant temporary noise impacts when construction takes place near the project boundaries, due to the surrounding residential land uses. As such, Alternative 2 would require noise reduction mitigation measures during construction, similar to the proposed project. Additionally, Alternative 2 would also include heating, ventilation, and air conditioning (HVAC) systems for the communal living facility, similar to the proposed project. Operational noise from HVAC systems could result in potentially significant operational noise impacts depending on the noise emission level of the selected HVAC systems. Alternative 2 would also require similar mitigation as the proposed project to ensure HVAC systems do not exceed the applicable noise standards. Therefore, impacts would be similar to the proposed project under Alternative 2.

Population and Housing

Alternative 2 would introduce new residences on the project site associated with the communal living facility. As such, this alternative would induce population growth on the project site which is currently undeveloped. However, a communal living facility is permitted under the existing zoning and General Plan land use designation. As such, the growth induced by development of a communal living facility would not be considered substantial unplanned growth and would not result in a significant impact. Therefore, impacts under Alternative 2 would be similar to the proposed project.

Public Services

As identified in Section 4.15, Public Services, of this EIR, the proposed project would increase the demand for public services in the City but would not result in any significant impacts on the environmental associated with these increases in demand. Under Alternative 2, demand for public services would also increase associated with the communal living

facility. Demand for emergency medical services, provided by the Sierra Madre Fire Department, may result in additional increases compared to the proposed project, due to the age of potential residents under Alternative 2. Nonetheless, the increase in demand under this alternative would be similar to that of the proposed project. Therefore, compared to the proposed project, Alternative 2 would result in similar impacts associated with public services.

Recreation

Alternative 2 would not include a neighborhood park but would also be required to fulfill parkland dedication requirements, per the Sierra Madre Municipal Code Chapter 15.52, because new communal living facility housing would be developed. As such, Alternative 2 would be required to pay in-lieu fees to satisfy the parkland dedication requirements. Although in-lieu fees would be paid to satisfy parkland dedication requirements, it is assumed that people introduced to the project site by development of Alternative 2 would use existing parks in the area, which could result in accelerated physical deterioration of existing parks. Therefore, Alternative 2 would result in slightly greater impacts than the proposed project because no neighborhood park would be developed.

Transportation

The proposed project would result in less-than-significant impacts related to transportation. Alternative 2 would include development of a communal living facility which would increase traffic on the local street network, similar to the proposed project. Emergency access to the site would be the similar to the proposed project. The communal living facility would include traffic generated from employees working at the facility, in addition to any traffic generated by residents of the facility. As discussed in Section 4.17, Transportation, the proposed project would be screened out from further VMT analysis using the Low VMT Area Screening criteria (see Section 4.17 for an overview of VMT screening criteria). Similar to the proposed project, Alternative 2 can be screened out from further VMT analysis using the Project Type Screening criteria (Fehr & Peers 2020). As such, it is assumed that Alternative 2 would result in similar traffic generation as the proposed project. Therefore, Alternative 2 would result in similar impacts than the proposed project.

Tribal Cultural Resources

Alternative 2 would still result in new development on the currently undeveloped project site. As such, the potential to impact tribal cultural resources or human remains would still remain and the same mitigation would be required for Alternative 2 as the proposed project. Therefore, impacts would be similar to the proposed project under Alternative 2.

Utilities and Service Systems

Alternative 2 would increase demand for utilities and service systems on the project site, similar to the proposed project. As discussed in Section 4.19.5, the proposed project would result in a total water demand of approximately 11.91 acre feet per year (AFY) and wastewater generation of approximately 2.74 million gallons per year (Appendix B). In addition, the proposed project would result in a generation of approximately 49.5 tons of solid waste per year (Appendix B). CalEEMod User's Guide Version 2016.3.2 was used to estimate utility and service system usage associated with this alternative. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot communal living facility would result a total water demand of approximately 22.92 million gallons per year (or 70.33 AFY), wastewater generation of approximately 17.92 million gallons per year, and solid waste generation of approximately 250.94 tons per year (CAPCOA 2017). Therefore, impacts to utilities and service systems would be increased under Alternative 2.

Wildfire

The proposed project would result in less-than-significant impacts associated with wildfire risk and hazards. Similar to the proposed project, Alternative 2 would also introduce people and structures to the project site, which is within a VHFHSZ. However, Alternative 2 would also be required to prepare a FPP due to the site's location within a VHFHSZ and would be required to comply with existing regulations related to fire protection, similar to the proposed project. Therefore, the Alternative 2 would result in similar impacts as the proposed project regarding wildfire hazards.

Relation to Project Objectives

Alternative 2 would meet Objective 2 because development of a communal living facility would constitute orderly planning and long-range development of the project site. Additionally, Alternative 2 would meet Objective 5 because development of the communal living facility would still achieve a net-zero impact on local water supplies. Finally, Alternative 2 would meet Objective 7 because North Sunnyside Avenue would still be improved to facilitate safe and efficient access to the site.

Alternative 2 would not meet Objectives 1 or 8 because no single-family residential community would be developed. Similarly, Alternative 2 would not meet Objectives 3 and 6 because no neighborhood park would be developed. Finally, Alternative 2 would not meet Objective 4 because the bulk and scale of the buildings associated with the communal living facility would not be entirely compatible with the surrounding residential developments.

8.6.3 Alternative 3: Existing Zoning and Land Use Designation: Private School Alternative

The Existing Zoning and Land Use Designation: Private School Alternative (Alternative 3) would include development of a private school, consistent with the existing Institutional zoning and General Plan land use designation of the project site. Therefore, no rezone or General Plan Amendment would be required under this alternative. Based on the 35% lot coverage required by the zoning code, the maximum allowable footprint based on existing zoning would allow for development of approximately 275,000 square feet. No neighborhood park would be developed under this alternative. Carter Avenue would be improved similar to the proposed project and would be used as secondary egress and ingress access to the site. North Sunnyside Avenue would remain a private street under this alternative.

Comparison to Proposed Project

Aesthetics

Alternative 3 would result in development of a private school consistent with the existing Institutional zoning and General Plan land use designation within a similar footprint as the proposed project. However, development of a private school would introduce greater bulk and scale associated with the facility buildings, which would be larger than the individual residential houses associated with the proposed project. Although the private school would introduce greater bulk and scale than the proposed project, the San Gabriel Mountains would still be substantially greater in elevation than buildings associated with Alternative 3 and views of the mountains would not be obstructed from south of the project site, similar to the proposed project. However, views of the project site from the trails within the San Gabriel Mountains would appear less congruent with the surrounding land uses under Alternative 3, as the private school would be more distinguishable from the surrounding residential land uses than the proposed project. As such, scenic views from the San Gabriel Mountains would be more impacted under Alternative 3.

Alternative 3 would also introduce new sources of lighting and glare to the currently undeveloped project site. This alternative would be required to comply with applicable rules and regulations concerning lighting, glare, and scenic quality, including **PDF-AES-3**, similar to the proposed project. Finally, due to the same location of the project site as the proposed project, this alternative would not impact a state scenic highway because none are located in the vicinity of the project site. Therefore, due to the greater bulk and scale of Alternative 3, impacts would be greater as compared to the proposed project with regard to aesthetics.

Agriculture and Forestry Resources

Alternative 3 would still result in new development on the currently undeveloped project site. However, no important farmland, land zoned for agriculture, forest land, or timber land exists on the project site. As such, similar to the proposed project, Alternative 3 would also result in no impacts to agriculture and forestry resources. Therefore, impacts would be similar to the proposed project under Alternative 3.

Air Quality

CalEEMod User's Guide Version 2016.3.2 was used to estimate air quality emissions for construction and operation of Alternative 3. According to CalEEMod estimates, Alternative 3 would result in greater construction and operational emissions of criteria air pollutants than the proposed project, and specifically would exceed the SCAQMD threshold for VOC emissions during construction. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot private school would result in 127.72 pounds per day of VOC emissions during construction. By comparison, the proposed project would result in 54.40 pounds per day of VOC emissions during construction. The proposed project would not exceed SCAQMD thresholds for any criteria air pollutants and would result in less than significant air quality impacts, but would result in emissions in excess of site-specific localized significance thresholds PM_{10} and $PM_{2.5}$; therefore, localized construction impacts during construction of the project would be potentially significant. Mitigation measure **MM-AQ-1** would be required to reduce impacts to less than significant. However, as shown in the calculations above, development of a private school under Alternative 3 would result in greater emissions of criteria air pollutants and a potentially significant impact related to construction VOC emissions. As such, Alternative 3 would result in greater air quality impacts compared to the proposed project, and would require mitigation to reduce impacts to less than significant, if such mitigation were feasible. If mitigation were not feasible, impacts would be significant and unavoidable.

Biological Resources

Alternative 3 would result in a similar development footprint than the proposed project. However, Alternative 3 would still result in new development on the project site which would potentially impact protected trees, and nesting birds if vegetation clearing occurred during breeding season, similar to the proposed project. Alternative 3 would result in the same impacts to biological resources as the proposed project and would require similar mitigation for nesting bird avoidance and protected tree replacement. Therefore, impacts would be similar to the proposed project under Alternative 3.

Cultural Resources

Alternative 3 would still result in new development on the currently undeveloped project site. As such, the potential to impact cultural resources, including historic and archaeological resources or human remains, would still remain, and the same mitigation would be required for Alternative 3 as the proposed project. Therefore, impacts would be similar to the proposed project under Alternative 3.

Energy

Alternative 3 would increase demand for energy on the project site, similar to the proposed project. The proposed project would result in electricity usage of 344,748 kilowatt-hours per year (Appendix B). In addition, the proposed project would result in natural gas usage of 1,153,930 kilo-British Thermal Units per year (Appendix B). CalEEMod User's Guide Version 2016.3.2 was used to estimate energy usage associated with this alternative. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot private school would result in electricity usage of 1,628,000 kilowatt-hours per year and natural gas usage of 2,860,000 kilo-British Thermal Units per year (CAPCOA 2017). Therefore, impacts related to energy usage would be increased under Alternative 3.

Geology and Soils

Alternative 3 would introduce new development to the project site associated with the private school. However, the proposed project would result in less-than-significant impacts to geology and soils, with implementation of **PDF-GEO-1** through **PDF-GEO-15**, as well as mitigation measures **MM-GEO-1** and **MM-GEO-2,** which would be implemented to reduce impacts to impacts related to geology and soils and paleontological resources to less than significant. Alternative 2 would result in similar impacts associated with geologic hazards because this alternative would be developed on the same site as the project and construction of Alternative 2 would be required to comply with the same existing regulations and similar mitigation measures. Therefore, compared to the proposed project, the Alternative 3 would result in similar impacts as the proposed project regarding geology and soils.

Greenhouse Gas Emissions

CalEEMod User's Guide Version 2016.3.2 was used to estimate greenhouse gas emissions for construction and operation of Alternative 3. According to CalEEMod estimates, Alternative 3 would result in slightly less greenhouse gas emissions than the proposed project during construction. However, Alternative 3 would also result in significantly greater operational greenhouse gas emissions than the proposed project. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot private school would result in 26.12 MT CO_2e per year during construction and 4899.37 MT CO_2e per year during operation. By comparison, the proposed project would result in 36.91 MT CO_2e per year during construction and 791.88 MT CO_2e per year during operation. The proposed project would result in less-than-significant impacts related to greenhouse gas emissions. However, development of a private school would exceed the significance threshold of 3,500 MT CO_2e per year during operation of the private school, resulting in a potentially significant impact. As such, impacts under Alternative 3 would be greater as compared with the proposed project.

Hazards and Hazardous Materials

The proposed project would result in less-than-significant impacts associated with hazards and hazardous materials, including wildfire hazards. Under the Alternative 3, the potential for hazards and hazardous materials related impacts on the project site would be similar to the proposed project as the location would remain the same. These would include potential impacts associated with previous agricultural uses on the project site and existence of a former underground storage tank north of the northeast corner of the project site. However, both of these conditions were determined to result in less-than-significant impacts through preparation of the Phase I and II ESA for the proposed project, included as Appendix F1. Additionally, although the land use type would be different under Alternative 3, hazardous materials used for operation of the private school would consist of consumer products such as household cleaning products, landscaping chemicals and fertilizers, and other commonly used hazardous substances similar to the proposed project. However, landscaping chemicals and fertilizers associated with

maintenance of the neighborhood park would not be required under Alternative 3 because no public park would be included under this alternative. Similar to the proposed project, Alternative 3 would also introduce people and structures to the project site, which is within a VHFHSZ. However, Alternative 3 would also be required to prepare a FPP due to the site's location within a VHFHSZ and would be required to comply with existing regulations related to fire protection, similar to the proposed project. Therefore, the Alternative 3 would result in similar impacts as the proposed project regarding hazards and hazardous materials.

Hydrology and Water Quality

The proposed project would have less-than-significant impacts related to hydrology and water quality on the project site. Alternative 3 would result in a similar footprint as the proposed project. As such, the potential for hydrology and water quality related impacts on the project site would be the same as the proposed project. However, this alternative would still require similar development permits as the proposed project, preparation of a SWPPP, and incorporation of best management practices, due to the introduction of new development to an undeveloped site. When compared to the proposed project, the Alternative 3 would result in similar impacts to hydrology and water quality.

Land Use and Planning

Under Alternative 3, there would be no amendments to the zoning code or General Plan as this alternative would comply with the existing Institutional zoning and land use designation. However, with implementation of **MM-BIO-3,** the proposed project would not result in any environmental impacts due to conflicts with relevant plans, policies, or regulations, including the zoning code and General Plan which would be amended concurrently with approval of the proposed project, if approved. Although Alternative 3 would not require the same discretionary actions as the proposed project including amendments to the zoning code and General Plan, with implementation of **MM-BIO-3,** the inclusion of these discretionary actions under the proposed project would not result in any land use and planning impacts. It is anticipated that Alternative 3 would also result in removal of trees and thus implementation of **MM-BIO-3** would still be required. Therefore, Alternative 3 would result in similar impact as the proposed project.

Mineral Resources

Alternative 3 would result in new development on the currently undeveloped project site. However, the project site is located in areas of undetermined mineral resource significance and there are no locally important mineral resource recovery sites in the City. As such, similar to the proposed project, Alternative 3 would also result in less-than-significant impacts to mineral resources. Therefore, impacts would be similar to the proposed project under Alternative 3.

Noise

Similar to the proposed project, Alternative 3 would also result in construction activities on the currently undeveloped project site which would result in potentially significant temporary noise impacts when construction takes place near the project boundaries, due to the surrounding residential land uses. As such, Alternative 3 would require noise reduction mitigation measures during construction, similar to the proposed project. Additionally, Alternative 3 would also include HVAC systems for the communal living facility, similar to the proposed project. Operational noise from HVAC systems could result in potentially significant operational noise impacts depending on the noise emission level of the selected HVAC systems. Alternative 3 would also require similar mitigation as the proposed project to ensure HVAC systems do not exceed the applicable noise standards. Therefore, impacts would be similar to the proposed project under Alternative 3.

Population and Housing

Alternative 3 would not introduce new residential uses on the project site. Alternatively, a private school would be developed. Development of a private school could result in population growth in the area associated with the employees and students at the school. However, it is assumed that the school would serve the existing community and potential employees would already be located in the area. Some employees may move to the City to work at the school. However, population induced by development of a private school would be less than the population induced by development of residential land uses associated with the proposed project. As such, the growth induced by development of a private school would not be considered substantial unplanned growth and would not result in a significant impact, similar to the proposed project. However, because population growth would be reduced under Alternative 3, impacts under Alternative 3 would be slightly reduced, compared to the proposed project.

Public Services

As identified in Section 4.15, the proposed project would increase the demand for public services in the City but would not result in any significant impacts on the environmental associated with these increases in demand. Under Alternative 3, demand for public services would also increase associated with the private school. However, the increase in demand under this alternative would be less than that of the proposed project. Primarily, the increase in demand for existing schools would not occur as would happen with the proposed project because Alternative 3 would develop a private school rather than housing. Additionally, the school would only operate during daytime hours which would limit demand on police and fire service. Therefore, compared to the proposed project, Alternative 3 would result in less demand and reduced impacts associated with public services.

Recreation

Alternative 3 would not include a neighborhood park but would also be required to fulfill parkland dedication requirements per the Sierra Madre Municipal Code Chapter 15.52. As such, Alternative 3 would be required to pay in-lieu fees to satisfy the parkland dedication requirements. However, it is assumed that students and teachers introduced to the project site by development of Alternative 3 would use parks and open spaces within the proposed school. However, students and teachers introduced on site under Alternative 3 would still use existing parks, which could result in accelerated physical deterioration of existing parks. Therefore, Alternative 3 would result in slightly greater impacts than the proposed project because no neighborhood park would be developed.

Transportation

The proposed project would result in less-than-significant impacts related to transportation. Alternative 3 would include development of a private school which would increase traffic on the local street network, similar to the proposed project. Emergency access to the site would be the same as the proposed project. The private school would also include traffic generated from students and employees working at the school. This traffic generation would also be primarily peak hour traffic in the AM, mid-day, during drop off and pick up times for the students. As discussed in Section 4.17, the proposed project would be screened out from further VMT analysis using the Low VMT Area Screening criteria (see Section 4.17 for an overview of VMT screening criteria). However, Alternative 3 cannot be screened out from further VMT analysis using the Low VMT Area Screening criteria since this alternative is not similar to the existing land uses in the low VMT area. In addition, Alternative 3 cannot be screened out suing the Project Type Screening criteria since private school is not considered to be a local serving facility. Lastly, similar to the proposed project, Alternative 3 cannot be screed out using the transit-priority area screening criteria as the site is not located within a transit-priority area (Fehr & Peers 2020). Therefore, additional analysis would be required

to analyze VMT, and, because VMT cannot be screened out, it is assumed that Alternative 3 would result in greater impacts to transportation. Therefore, Alternative 3 would result in greater impacts than the proposed project.

Tribal Cultural Resources

Alternative 3 would still result in new development on the currently undeveloped project site. As such, the potential to impact tribal cultural resources or human remains would still remain and the same mitigation would be required for Alternative 3 as the proposed project. Therefore, impacts would be similar to the proposed project under Alternative 3.

Utilities and Service Systems

Alternative 3 would increase demand for utilities and service systems on the project site, similar to the proposed project. As discussed in Section 4.19.5, the proposed project would result in a total water demand of approximately 11.91 acre feet per year (AFY) and wastewater generation of approximately 2.74 million gallons per year (Appendix B). In addition, the proposed project would result in a generation of approximately 49.5 tons of solid waste per year (Appendix B). CalEEMod User's Guide Version 2016.3.2 was used to estimate utility and service system usage associated with this alternative. Per the CalEEMod User's Guide, development of an approximately 275,000 square foot private school would result a total water demand of approximately 28.48 million gallons per year (or 85.40 AFY), wastewater generation of approximately 7.97 million gallons per year, and solid waste generation of approximately 357.50 tons per year (CAPCOA 2017). Therefore, impacts to utilities and service systems would be increased under Alternative 3.

Wildfire

The proposed project would result in less-than-significant impacts associated with wildfire risk and hazards. Similar to the proposed project, Alternative 3 would also introduce people and structures to the project site, which is within a VHFHSZ. However, Alternative 3 would also be required to prepare a FPP due to the site's location within a VHFHSZ and would be required to comply with existing regulations related to fire protection, similar to the proposed project. Therefore, the Alternative 3 would result in similar impacts as the proposed project regarding wildfire hazards.

Relation to Project Objectives

Alternative 3 would meet Objective 2 because development of a private school would constitute orderly planning and long-range development of the project site. Additionally, Alternative 3 would meet Objective 5 because development of the private school would still achieve a net-zero impact on local water supplies. Finally, Alternative 3 would meet Objective 7 because North Sunnyside Avenue would still be improved to facilitate safe and efficient access to the site.

Alternative 3 would not meet Objectives 1 or 8 because no single-family residential community would be developed. In addition, Alternative 3 would not meet Objectives 3 and 6 because no neighborhood park would be developed. Finally, Alternative 3 would not meet Objective 4 because the bulk and scale of the buildings associated with the private school would not be very compatible with the surrounding residential developments.

8.6.4 Alternative 4: Reduced Development/No Park Alternative

The Reduced Development Alternative (Alternative 4) would include development of 34 detached single-family residential units on the same approximately 17.30-acre project site, representing an approximately 20% reduction

from the proposed project. Alternative 4 would require the same discretionary actions as the proposed project to change the existing Institutional zoning and General Plan land use designation to allow for development of residential uses. Under the proposed project, the proposed public park would be maintained by a landscape maintenance district or similar public maintenance entity. Because of reduced number of units under this alternative, there would not be enough funds to maintain a public park in accordance with City standards. Therefore, Alternative 4 would not include a neighborhood park. Although fewer units would be developed under this alternative, the lot size of each residential unit would be increased. Similar to the proposed project, the Reduced Development Alternative would also result in reconfiguration of North Sunnyside Avenue and improvements to Carter Avenue. Primary access to the project site would be provided by North Sunnyside Avenue, which would be publicly accessible. Carter Avenue would be improved similar to the proposed project and would be used as secondary egress and ingress access to the site.

Comparison to Proposed Project

Aesthetics

Alternative 4 would include 34 detached single-family residential units on the same project footprint as the proposed project. Although fewer units would be developed under this alternative, the lot size of each residential unit would be increased. Any views of Alternative 4 from public vantage points south of the project site or from trails within the San Gabriel Mountains would be similar to the project as the land use type and development footprint would remain the same.

Alternative 4 would also introduce new sources of lighting and glare to the currently undeveloped project site. This alternative would be required to comply with applicable rules and regulations concerning lighting, glare, and scenic quality, similar to the proposed project. Finally, due to the same location of the project site as the proposed project, this alternative would not impact a state scenic highway because none are located in the vicinity of the project site. Therefore, impacts would be similar to the proposed project under Alternative 4.

Agriculture and Forestry Resources

Alternative 4 would still result in new development on the currently undeveloped project site. However, no important farmland, land zoned for agriculture, forest land, or timber land exists on the project site. As such, similar to the proposed project, Alternative 4 would also result in no impacts to agriculture and forestry resources. Therefore, impacts would be similar to the proposed project under Alternative 4.

Air Quality

Alternative 4 would include 34 detached single-family residential units on the same project site rather than the 42 units proposed under the project. Additionally, Alternative 4 would not include a neighborhood park. As such, Alternative 4 would result in less overall construction and therefore less emissions due to the reduction in development. Operation of Alternative 4 would also result in less emissions as no public park would require ongoing maintenance and less population would be induced on the project site. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 4.

Biological Resources

Alternative 4 would result in a similar development footprint as the proposed project with less residential units and larger lot sizes. As such, Alternative 4 could still potentially impact protected trees, similar to the proposed project.

Therefore, Alternative 4 would require similar mitigation for nesting bird avoidance and protected tree replacement. Therefore, impacts would be similar to the proposed project under Alternative 4.

Cultural Resources

Alternative 4 would include less residential units than the proposed project. However, the lot sizes of each unit would be increased. As such, the development footprint would be similar to the proposed project so Alternative 4 would still have the potential to impact archaeological resources or human remains. As such, the same mitigation would be required for Alternative 4 as the proposed project. Therefore, impacts would be similar to the proposed project under Alternative 4.

Energy

Alternative 4 would result in a lower energy consumption during construction as compared to the proposed project due to the reduction in residential units developed and shortened construction period. Additionally, energy consumption would be reduced under this alternative because the slightly smaller development footprint would require less groundwork. Furthermore, with less population induced on the project site, operational energy use would also be reduced under Alternative 4. Although the proposed project would result in less-than-significant impacts associated with energy, including the wasteful, inefficient, or unnecessary consumption of energy resources, Alternative 4 would result in slightly reduced construction and operational energy consumption. Therefore, the project's already less-than-significant impacts would be slightly reduced under Alternative 4 when compared to the proposed project.

Geology and Soils

Alternative 3 would introduce new development to the project site associated with the private school. However, the proposed project would result in less-than-significant impacts to geology and soils, with implementation of **PDF-GEO-1** through **PDF-GEO-15**, as well as **MM-GEO-1** and **MM-GEO-2,** which would be implemented to reduce impacts to impacts related to geologic hazards and paleontological resources to less than significant. Alternative 2 would result in similar impacts associated with geologic hazards because this alternative would be developed on the same site as the project and construction of Alternative 2 would be required to comply with the same existing regulations and similar mitigation measures. As such, Alternative 3 would require the same mitigation as the proposed project. Therefore, compared to the proposed project, the Alternative 3 would result in similar impacts as the proposed project regarding geology and soils.

Greenhouse Gas Emissions

Alternative 4 would include 34 detached single-family residential units on the same project site rather than the 42 units proposed under the project. Additionally, Alternative 4 would not include a neighborhood park. As such, Alternative 4 would result in less overall construction and therefore less greenhouse gas emissions due to the reduction in development. Operation of Alternative 4 would also result in less greenhouse gas emissions as no park would require ongoing maintenance and less population would be induced on the project site. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 4.

Hazards and Hazardous Materials

The proposed project would result in less-than-significant impacts associated with hazards and hazardous materials, including wildfire hazards. Under the Alternative 4, the potential for hazards and hazardous materials

related impacts on the project site would be similar to the proposed project as the land use and location would remain the same. These would include potential impacts associated with previous agricultural uses on the project site and existence of a former underground storage tank north of the northeast corner of the project site. However, both of these conditions were determined to result in less-than-significant impacts through preparation of the Phase I and II ESA for the proposed project, included as Appendix F1.

Additionally, hazardous materials used for operation of Alternative 4 would consist of consumer products such as household cleaning products, landscaping chemicals and fertilizers, and other commonly used hazardous substances same as with the proposed project. However, landscaping chemicals and fertilizers associated with maintenance of the neighborhood park would not be required under Alternative 4 because no park would be included under this alternative. Therefore, the Alternative 4 would result in similar impacts as the proposed project regarding hazards and hazardous materials.

Hydrology and Water Quality

The proposed project would have less-than-significant impacts related to hydrology and water quality on the project site. Alternative 4 would result in a similar footprint as the proposed project. As such, the potential for hydrology and water quality related impacts on the project site would be the same as the proposed project. However, this alternative would still require similar development permits as the proposed project, preparation of a SWPPP, and incorporation of best management practices, due to the introduction of new development to an undeveloped site. When compared to the proposed project, the Alternative 4 would result in similar impacts to hydrology and water quality.

Land Use and Planning

Alternative 4 would require all the same discretionary actions listed in Chapter 3, Project Description, because the project site is not currently zoned or designated for residential development. This would include amendments to the zoning code and General Plan. However, with implementation of **MM-BIO-3,** the proposed project would not result in any environmental impacts due to conflicts with relevant plans, policies, or regulations, including the zoning code and General Plan which would be amended concurrently with approval of the proposed project, if approved. It is anticipated that Alternative 4 would also result in removal of trees and thus implementation of **MM-BIO-3** would still be required. Therefore, Alternative 4 would result in similar impacts related to land use and planning as the proposed project.

Mineral Resources

Alternative 4 would still result in new development on the currently undeveloped project site. However, the project site is located in areas of undetermined mineral resource significance and there are no locally important mineral resource recovery sites in the City. As such, similar to the proposed project, Alternative 4 would also result in less-than-significant impacts to mineral resources. Therefore, impacts would be similar to the proposed project under Alternative 4.

Noise

Similar to the proposed project, Alternative 4 would also result in construction activities on the currently undeveloped project site which would result in potentially significant temporary noise impacts when construction takes place near the project boundaries, due to the surrounding residential land uses. As such, Alternative 4 would require noise reduction mitigation measures during construction, similar to the proposed project. Additionally, Alternative 4 would also include HVAC systems for the communal living facility, similar to the proposed project. Operational noise from HVAC systems could result in potentially significant operational noise impacts depending

on the noise emission level of the selected HVAC systems. Alternative 4 would also require similar mitigation as the proposed project to ensure HVAC systems do not exceed the applicable noise standards. Therefore, impacts would be similar to the proposed project under Alternative 4.

Population and Housing

Alternative 4 would result in the development of 34 residential units, which is 8 fewer than the proposed project, thereby resulting in less induced growth in the area as compared to the proposed project. As discussed in Section 4.14, Population and Housing, the growth induced by the proposed project would not be considered substantial and impacts would be less than significant. With less growth induced under this alternative due to the reduction in units, impacts would also be less than significant and impacts under Alternative 4 would be slightly reduced when compared to the proposed project.

Public Services

As identified in Section 4.15, Public Services, the proposed project would increase the demand for public services in the City but would not result in any significant impacts on the environmental associated with these increases in demand. Under the Alternative 4, demand for public services would still increase with development of the project site. However, the induced population would be smaller than the proposed project due to the reduction in residential units developed. Thus, the increase in demand for public services would be less under this alternative. When compared to the already less-than-significant impacts of the proposed project, Alternative 4 would result in reduced impacts associated with public services.

Recreation

The proposed project would result in less-than-significant impacts associated with parks and recreation facilities because the proposed project would include a neighborhood park which would fulfill parkland dedication requirements. Alternative 4 would not include a neighborhood park but would also be required to fulfill parkland dedication requirements, per the Sierra Madre Municipal Code Chapter 15.52, because this alternative would include development of 34 new residential units. As such, Alternative 4 would be required to pay in-lieu fees to satisfy the parkland dedication requirements. Although in-lieu fees would be paid to satisfy parkland dedication requirements, it is assumed that people introduced to the project site by development of Alternative 4 would use existing parks in the area, which could result in accelerated physical deterioration of existing parks. Therefore, Alternative 4 would result in greater impacts than the proposed project because no neighborhood park would be developed.

Transportation

Alternative 4 would result in less traffic trips associated with both construction and operation due to the reduction in residential units. Emergency access to the site would be the same as the proposed project. As discussed in Section 4.17, the proposed project would be screened out from further VMT analysis using the Low VMT Area Screening criteria (see Section 4.17 for an overview of VMT screening criteria). As defined by the City, a low VMT zone has VMT per service population 15% or more below the Northwest Region Baseline VMT. Alternative 4 would still satisfy the screening criteria based upon the Origin-Destination (OD) method and can be screened out from VMT assessment, similar to the proposed project. Therefore, impacts would be similar under Alternative 4.

Tribal Cultural Resources

Alternative 3 would still result in new development on the currently undeveloped project site. As such, the potential to impact tribal cultural resources would still remain and the same mitigation would be required for Alternative 3 as the proposed project. Therefore, impacts would be similar to the proposed project under Alternative 3.

Utilities and Service Systems

Alternative 4 would increase demand for utilities and service systems on the project site, similar to the proposed project. However, due to the reduction in residential units and reduced population inducement on the project site, the demand for public utilities and service systems would be less than under the proposed project. Therefore, the project's already less-than-significant impacts would be reduced under Alternative 4.

Wildfire

The proposed project would result in less-than-significant impacts associated with wildfire risk and hazards. Similar to the proposed project, Alternative 4 would also introduce people and structures to the project site, which is within a VHFHSZ. However, Alternative 4 would also be required to prepare a FPP due to the site's location within a VHFHSZ and would be required to comply with existing regulations related to fire protection, similar to the proposed project. Therefore, the Alternative 4 would result in similar impacts as the proposed project regarding wildfire hazards.

Relation to Project Objectives

Alternative 4 would meet Objective 1 because a high-quality single-family residential community would be still be developed Additionally, Alternative 4 would meet Objective 2 because development of a reduced residential community would constitute orderly planning and long-range development of the project site. Alternative 4 would also meet Objective 4 because development standards and architectural guidelines would be developed for the reduced residential community to provide compatibility with surrounding development and Objective 5 because development of the reduced residential community would still achieve a net-zero impact on local water supplies. Alternative 4 would meet Objective 7 because North Sunnyside Avenue would still be improved to facilitate safe and efficient access to the site. Finally, Alternative 4 would meet Objective 8 because above-moderate income housing would still be developed in accordance with the 6th Cycle Regional Housing Needs Assessment.

Alternative 3 would not meet Objectives 3 and 6 because no neighborhood park would be developed.

8.7 Environmentally Superior Alternative

The No Project Alternative would result in the least environmental impacts and would be the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In this case, the environmentally superior alternative is the Reduced Development Alternative. The Reduced Development Alternative would meet most of the project objectives, but to a lesser degree than the proposed project while reducing impacts resulting from greater population growth of the proposed project. The project's impacts are compared to each alternative's impacts in Table 8-1.

Table 8-1. Alternatives Impact Summary

Environmental Issue	Proposed Project Impacts Prior to Mitigation	Proposed Project Impacts with Mitigation	No Project/ No Build Alternative	Existing Zoning: Communal Residential Facility Alternative	Existing Zoning: Private School	Reduced Development Alternative
Aesthetics	LTS	LTS	▼	▲	▲	—
Agriculture and Forestry Resources	N	N	—	—	—	—
Air Quality	LTS	LTS	▼	▲	▲	▼
Biological Resources	PS	LTS	▼	—	—	—
Cultural Resources	PS	LTS	▼	—	—	—
Energy	LTS	LTS	▼	▲	▲	▼
Geology and Soils	PS	LTS	▼	—	—	—
Greenhouse Gas Emissions	LTS	LTS	▼	▲	▲	▼
Hazards and Hazardous Materials	LTS	LTS	▼	—	—	—
Hydrology and Water Quality	LTS	LTS	▼	—	—	—
Land Use and Planning	PS	LTS	▼	—	—	—
Mineral Resources	LTS	LTS	▼	—	—	—
Noise	PS	LTS	▼	—	—	—
Population and Housing	LTS	LTS	▼	—	▼	▼
Public Services	LTS	LTS	▼	—	▼	▼
Recreation	LTS	LTS	▼	▲	▲	▲
Transportation	LTS	LTS	▼	—	▲	—
Tribal Cultural Resources	PS	LTS	▼	—	—	—
Utilities and Service Systems	LTS	LTS	▼	▲	▲	▼
Wildfire	LTS	LTS	▼	—	—	—
Meet Project Objectives	*Yes*	*Yes*	*No*	*No*	*No*	*No*

Notes:

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
— Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.

N = No impact.
LTS = Less-than-significant impact.
PS = Potentially significant impact.
SU = Significant and unavoidable impact.

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10 EIR Preparers

10.1 NUWI Sierra Madre LLC

Jonathan Frankel, VP Forward Planning

10.2 Dudek

Carey Fernandes, Principal
Iulia Roman, Environmental Planner
Joe Harrison, Environmental Analyst
Brandon Whalen-Castellanos, Environmental Analyst
Lilli Renier, Environmental Analyst
Michael Greene, INCE Bd. Cert., Noise Specialist/Acoustician
Adam Poll, Senior Technical Air Quality Specialist
Samantha Wang, Air Quality Specialist
Michael Cady, Senior Biologist
Ryan Allen, Urban Forester
Kate Kaiser, MSHP, Architectural Historian
Sarah Corder, MFA, Senior Architectural Historian
Samantha Murray, MA, Historic Built Environment Lead
Linda Kry, Archaeologist
Heather McDaniel McDevitt, RPA, Archaeologist
Michael Huff, Principal Fire Protection Planner
Andrew Greis, GIS Specialist
Chelsea Ringenback, Publications Specialist

10.3 Subconsultants

Geosoils Consultants Inc.
Rudy F. Ruberti
Karen L. Miller

Stantec
Alicia Jansen, Associate Scientist
James DeWoody, Senior Scientist
Kyle Emerson, CEG, PG, Managing Principal Geologist

Fehr & Peers
Biling Lui
Steven J. Brown, PE

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