VOLUME I

VILLA SERENA SPECIFIC PLAN PROJECT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2022020150

UPLAND, CALIFORNIA

LSA

May 2024

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VILLA SERENA SPECIFIC PLAN PROJECT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2022020150

UPLAND, CALIFORNIA

Submitted to:

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May 2024

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/m^3	micrograms per cubic meter
15th Street Basin	15th Street Flood Control Basin
AB	Assembly Bill
ADT	average daily traffic
Air Quality and Land Use Handbook	CARB's Air Quality and Land Use Handbook: A Community Health Perspective
ALUCP	Airport Land Use Compatibility Plan
amsl	above mean sea level
APN	Assessor's Parcel Number
AQMP	air quality management plan
BANL	base ambient noise level
basin	15th Street control detention basin
Basin	South Coast Air Basin
Basin Plan	Santa Ana RWQCB Water Quality Control Plan
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practices
BP	before present
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
Caltrans	California department of Transportation
CARB	California Air Resources Board
CAT	California Climate Action Team
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act

CESA	California Endangered Species Act
CGP	Construction General Permit
CH_4	methane
City	Upland
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COA	Conditions of Approval
Construction General Permit	NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002
County	County of San Bernardino Flood Control District
CRHR	California Register of Historic Resources
CUP	Conditional Use Permit
cy	cubic yards
dB	decibels
dBA	A-weighted decibels
DIF	Development Impact Fee
DOF	California Department of Finance
DPM	diesel particulate matter
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
EVA	emergency vehicle access
FAR	floor area ratio
FCAA	federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
First Update	CARB First Update to the Climate Change Scoping Plan
GHG	greenhouse gas

GWP	global warming potential
HFCs	hydrofluorocarbons
HMMP	Habitat Mitigation and Monitoring Program
IEUA	Inland Empire Utilities Agency
in/sec	inches per second
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IS/MND	Initial Study/Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
LCFS	Low Carbon Fuel Standard
L_{eq}	equivalent continuous sound level
LID	low-impact development
L_{max}	maximum instantaneous noise level
LOS	level(s) of service
LST	localized significance threshold
MBTA	Migratory Bird Treaty Act
MMRP	Mitigation Monitoring and Reporting Program
MMT CO_2e	million metric tons of carbon dioxide equivalent
mpg	miles per gallon
MPO	Metropolitan Planning Organization
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OHWM	ordinary high water mark
OPR	Governor's Office of Planning and Research

PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
project	Villa Serena Specific Plan Project
RCP	reinforced concrete pipe
RCP	Regional Comprehensive Plan
RMS	root-mean-square
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	SCAG 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SAA	streambed alteration agreement
SAWCo	San Antonio Water Company
SB	Senate Bill
SBCFCD	San Bernardino County Flood Control District
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	sustainable communities strategy
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMBMI	San Manuel Band of Mission Indians
SO_2	sulfur dioxide
Specific Plan	Villa Serena Specific Plan

SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TAZ	traffic analysis zone
TMDL	total maximum daily load
TPA	Transit Priority Area
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UUSD	Upland Unified School District
VdB	vibration velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
vph	vehicles per hour
watershed	Santa Ana River Watershed
WECWC	West End Consolidated Water Company
Working Group	SCAQMD GHG CEQA Significance Threshold Working Group
WQMP	Water Quality Management Plan

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1.0 INTRODUCTION

1.1 PURPOSE OF THIS EIR

In compliance with the California Environmental Quality Act (CEQA) this Environmental Impact Report (EIR) describes the potential environmental impacts of the Villa Serena Specific Plan Project (project) proposed by The Colonies Partners, L.P. (the project sponsor). The City of Upland (City) is the CEQA Lead Agency for environmental review.

The purpose of this EIR is to inform City decision-makers, responsible agencies, and the general public about the proposed project and the potential physical environmental consequences of project implementation. This EIR also examines alternatives to the proposed project and recommends mitigation measures to reduce or avoid potentially significant physical environmental impacts to the extent feasible. This EIR will be used as an informational document by the City's Planning Commission and/or City Council, responsible agencies, and the public in their review of the proposed project and associated approvals, which are described below and in more detail in Chapter 3.0, Project Description.

1.2 PROPOSED PROJECT

The 9.16-acre project site consists of a portion of the existing 20.3-acre 15th Street flood control basin south of the Upland Hills Country Club in the central-eastern portion of Upland, San Bernardino County, California. The project site is bounded on the north by the Upland Hills Country Club, to the south by 15th Street and residential development, to the east by residential development, and to the west by residential development. The proposed project includes a General Plan Amendment and zone change to change the General Plan Land Use designation and zoning district for the project site, construction of 65 single-family residential units and the installation of ancillary features (e.g., landscaping, walls, street improvements). These improvements would be implemented through the proposed Villa Serena Specific Plan (Specific Plan) Area.

The proposed project includes the extension of 15th Street from the southwest corner of the project site to the current terminus of East 15th Street, which connects to Campus Avenue. This extension would allow primary project access from Campus Avenue. This gated access would provide primary residential access to the proposed development. The project also includes the development of a 0.15-acre public pocket park at East 15th Street and Fernando Avenue. Section 3.3 of the EIR identifies in further detail the project's various components.

Directly east of the area to be developed with residential uses, the remaining portion of the 15th Street Basin would be modified to retain necessary flood control capacity. An underground storm drain would convey flows through the site to relocated outlets in the modified basin. A new berm would be created between the flood control basin and the residential uses. From the top of the berm, a new slope would be graded to the bottom of the modified basin. The proposed floor of the modified basin is planned at an approximate elevation of 1,410 feet above mean sea level (amsl). Modifications to the bottom of the remaining basin would be made from the toe of the new slope to a point approximately 900 linear feet to the east by grading the bottom of the basin in this area to an elevation of approximately 1,410 feet amsl from an existing elevation of 1,414 to 1,415 feet amsl.

The excess cut material generated would be utilized as fill for the proposed new berm to be located at the western edge of the new basin as well as for fill within the project site. The basin modifications include the installation of a new basin outlet. To satisfy County of San Bernardino Flood Control District (County) criteria and City Public Works Department requirements, the basin would be retrofitted to accommodate a trapezoidal emergency spillway with a crest at an elevation of 1,426.6 feet amsl. The emergency spillway, with a base of 16 feet and a top width of 48.4 feet, would be installed at the end of Grove Avenue. A box weir outlet system would be designed to pass through a 200- or 500-year storm, with the emergency spillway providing discharge capacity for larger events. Sections 3.3.4 and 3.3.5 provide a detailed accounting of the basin modifications.

Discretionary actions by the City that would be necessary for development of the proposed project include environmental review, a General Plan Amendment/Rezoning, and approval of a Specific Plan, a Tentative Tract Map, and a Development Plan Review.

1.3 EIR SCOPE

A Mitigated Negative Declaration, supported by an Initial Study (IS/MND) was adopted for the proposed project by the City of Upland City Council on April 13, 2020, and a Notice of Determination (NOD) was filed on April 14, 2020.[1] The IS/MND was subsequently challenged in the County of San Bernardino Superior Court in *Friends of Upland Wetlands v. City of Upland*. The court held that certain environmental impact discussions were inadequate and did not fully consider the potential scope of significant impacts; therefore, the IS/MND was "set aside". To move the project forward, the City elected to prepare an EIR to fully review the project's impact on the environment, including those issues raised during the legal challenge. Environmental issue topics subject to the challenge included aesthetics and scenic vistas; ambient noise; biological resources; and hydrology/groundwater recharge. The City has also elected to include evaluations of greenhouse gas emissions, transportation, and tribal cultural resources in the EIR.

The City circulated a Notice of Preparation (NOP) informing responsible agencies and interested parties that an EIR would be prepared for the proposed project. The NOP was published on February 8, 2022 and mailed to public agencies, organizations, property owners near the site, and individuals likely to be interested in the potential impacts of the proposed project. A scoping session was held as a public meeting on June 8, 2022, to solicit feedback regarding the scope and content of the EIR. Both verbal comments and written comments were received from members of the public during the scoping period and were considered during preparation of this EIR. Copies of the NOP, comment letters, and a summary of the verbal comments received are included in Appendix A.

State CEQA Guidelines Section 15128 readily permits the use of other material "adequately examined" in a negative declaration or other document. Therefore, based on the analysis included in the Initial Study, the Court's decision in *Friends of Upland Wetlands v. City of Upland*, consultation with City staff, and review of the comments received during the scoping process, the following

[1] City of Upland. 2020. Final Initial Study/Mitigated Negative Declaration for the Villa Serena Specific Plan Project. April.

environmental topics are addressed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, of this EIR:

- 4.1 Aesthetics
- 4.2 Air Quality
- 4.3 Biological Resources
- 4.4 Greenhouse Gas Emissions
- 4.5 Hydrology and Water Quality
- 4.6 Noise
- 4.7 Transportation
- 4.8 Tribal Cultural Resources

It has been determined that the following potential environmental effects of the proposed project would be less than significant or have no impacts; therefore, these topics are "scoped out" and not further studied in detail in this EIR: agriculture and forestry resources, cultural resources, energy, geology and soils, hazards and hazardous materials, land use, mineral resources, population and housing, public services, recreation, utilities and service systems, and wildfire. Each of these topic areas are addressed in the Initial Study (Appendix A-5). Chapter 5.0, Other CEQA Considerations, of this EIR provides a summary of the analysis and conclusions for each environmental topic evaluated in the Initial Study that is not further addressed in Chapter 4.0 of this EIR. Chapter 6.0 evaluates the Project alternatives.

1.4 REPORT ORGANIZATION

The purpose of this EIR is to provide environmental review of the project, such that the City will be able to use this EIR to satisfy CEQA for project-related permits or approvals and to provide CEQA analysis. This EIR is organized into the following chapters:

- **Chapter 1 – Introduction:** Discusses the overall EIR purpose, provides a summary of the proposed project, describes the EIR scope, and summarizes the organization of the EIR.

- **Chapter 2 – Summary:** Provides an overview of the environmental process, identifies areas of potential controversy, summarizes the public review of the project to date, provides a summary of the impacts that would result from implementation of the proposed project, describes mitigation measures recommended to reduce or avoid potentially significant environmental impacts, and presents the alternatives to the proposed project.

- **Chapter 3 – Project Description:** Provides a description of the project site and the surrounding, details project characteristics, project objectives, and identifies required actions and approvals.

- **Chapter 4 – Setting, Impacts, and Mitigation Measures:** Describes the following for each technical environmental topic: (a) existing conditions (setting), (b) potential environmental impacts of the proposed project and their level of significance, and (c) mitigation measures recommended to reduce or avoid the identified potential impacts. Potential cumulative impacts are also addressed in each topical section. The significance of each potential impact is categorized before and after implementation of any recommended mitigation measure(s).

- **Chapter 5 – Other CEQA Considerations:** Provides an analysis of effects found not to be significant, including the Initial Study findings, growth-inducing impacts, unavoidable significant environmental impacts, and significant irreversible changes.

- **Chapter 6 – Alternatives:** Provides an evaluation of two alternatives to the proposed project in addition to the CEQA-required No Project Alternative.

- **Chapter 7 – Report Preparation:** Identifies the preparers of the EIR and the references used.

- **Appendices:**[2] Includes the technical and supporting data used to assess the project impacts presented in the EIR.

[2] A complete hardcopy of the Draft EIR and all appendices are available for review at the City of Upland Community Development, Planning Division and the City of Upland Public Library. These documents are also available in their entirety online at: https://www.uplandca.gov/environmental-review.

2.0 SUMMARY

This chapter provides an overview of the proposed project and findings identified in this Environmental Impact Report (EIR), prepared pursuant to the California Environmental Quality Act (CEQA), including a discussion of alternatives and cumulative project impacts.

2.1 PURPOSE OF CEQA AND THE ENVIRONMENTAL IMPACT REPORT

According to Section 15002 of the *State CEQA Guidelines*, the basic purposes of CEQA are to:

- Inform government decision makers and the public about the potential significant environmental effects of proposed activities;
- Identify ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governing agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

CEQA requires that a project be reviewed to determine the environmental effects that would result if the project were approved and implemented. The City has the responsibility for preparing the EIR, processing the applications for approvals, and determining whether to approve the project and certify this EIR. As Lead Agency, the City has the authority to make decisions regarding discretionary actions relating to implementation of the project.

CEQA requires that the Lead Agency consider the information contained in the EIR prior to taking any discretionary action on a project. This EIR provides information to the Lead Agency and other public agencies, the general public, and decision-makers regarding the potential environmental impacts from the construction and operation of the project. The purpose of the public review of the EIR is to evaluate the adequacy of the environmental analysis in terms of compliance with CEQA. Section 15151 of the *State CEQA Guidelines* states the following regarding standards from which adequacy is judged:

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

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

Under CEQA (Public Resources Code Section 21002.1[a]):

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

LSA has prepared this EIR under contract to the applicant pursuant to *State CEQA Guidelines* Section 15084(d)(4). As the City is responsible for the adequacy and objectivity of this EIR, the City has conducted its own independent review and verification of the analysis. Prior to certification, the Planning Commission and the City Council must independently review the methodologies used and the conclusions reached in the EIR.[1] If certified by the City, the information included in and the conclusions reached in the EIR will therefore represent the City's independent judgment.

This EIR has been prepared utilizing information from City planning and environmental documents, applicant-provided technical studies, and other publicly available data. Alternatives to the proposed project are also discussed, and mitigation measures that would offset, minimize, or otherwise avoid significant environmental impacts from the proposed project have been identified. This EIR has been prepared in accordance with CEQA[2] to inform City decision-makers, representatives of other affected/responsible agencies, the public, and other interested parties of the potential environmental consequences that may be associated with the approval and implementation of the project.

2.2 PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the potential environmental consequences of implementation (i.e., construction and operation) of the proposed Villa Serena Specific Plan Project (project) submitted by The Colonies Partners, L.P. (the project sponsor).

The proposed project would include implementation of the proposed Villa Serena Specific Plan. The proposed Specific Plan would consist of the development of the project site (also referred to as the "plan area") with 65 single-family detached residential units, on-site active and passive recreational amenities, the extension of improvements along 15th Street, modification of a portion of the remaining basin, and construction of public open space improvements. The City has determined the 9.16 acre portion of the flood control detention basin comprising the project site to be a surplus parcel. The remaining 11.1 acres of the flood control detention basin, as modified, would be adequate for continued flood control operations pursuant to completion of modifications to portions of the basin made as part of the proposed project. Implementation of the proposed

1 *State CEQA Guidelines,* 2023. Sections 15084((e).

2 California Public Resources Code §21000 et seq. and the *Guidelines for California Environmental Quality Act* (California Code of Regulations, Title 14, Division 6, Chapter 3).

Specific Plan would require a General Plan Amendment and rezoning for the site. Detailed project characteristics are provided in Section 3.2 of this Draft EIR.

2.3 POTENTIAL AREAS OF CONTROVERSY

2.3.1 Notice of Preparation

A total of 13 commenters submitted written responses to the Notice of Preparation (NOP[3]). The NOP and comments received are included as Appendices A-1 and A-2 of this EIR, respectively. Comments in response to the NOP generally identified the following areas of potential concern:

- The assessment of impacts on-site biological resources, threatened species, wetlands, and natural communities
- Impacts related to flood control capacity of the basin, impacts to ground water recharge, and the potential for flooding
- Identification of appropriate mitigation to reduce or eliminate project impacts
- Changes in the aesthetic character of the project area including obstruction of current views of the flood control basin and San Gabriel Mountains
- The volume and effect of air pollutants and greenhouse gases generated during construction and operation of the project
- The requirement for monitoring of ground disturbance to avoid potential impacts to Native American cultural material
- The project's consistency with local and regional planning goals

2.3.2 Public Scoping Meeting

A Public Scoping meeting was held on June 8, 2022, at the City of Upland City Council Chambers. The Public Scoping Meeting included a presentation providing a summary of the project (see Appendix A-3). Comments received during the Public Scoping meeting generally identified the following areas of concern.

- The past and current state of the basin, and the project's effect(s) on biological resources, wetlands, and natural community
- The effects of development/modification basin have on groundwater recharge and flood control capacity
- The effect of potential air pollutants generated during and after project development
- Concerns regarding the aesthetic condition and safety of surrounding neighborhoods

[3] The Notice of Preparation was distributed a 30-day public review period extending from February 8 to March 8, 2022. The City subsequently extended the period of public review to March 17, 2022.

- The purpose and extent of the environmental process undertaken for the project

A summary of the Public Scoping Meeting is provided in Appendix A-4 of this EIR

2.4 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in the Initial Study (Appendix B) and Chapter 4.0 Setting, Impacts, and Mitigation Measures, of this EIR.

2.4.1 Findings of the Initial Study

The Initial Study for the proposed project is included in Appendix A-5 to this EIR. The Initial Study identified (1) no impacts, (2) less than significant impacts, or (3) less than significant impacts with implementation of standard mitigation measures related to the following environmental issues:

- Agriculture and Forestry Resources
- Cultural Resources
- Energy
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

The proposed project would be required to comply with standard Conditions of Approval (COA) required by the City for approval of all Major Use Permits. Applicable COAs are identified in the regulatory setting for each environmental topic. For a complete description of potential impacts identified in the Initial Study, please refer to the specific discussion within each topical section of the Initial Study (Appendix A-5). Chapter 5.0, Other CEQA Considerations, also includes a summary of the findings for each topic not discussed in the EIR.

Pursuant to the settlement agreement and consultation with the City, this Draft EIR includes detailed evaluation related to the following environmental issues:

- Aesthetics
- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Transportation
- Tribal Cultural Resources

2.4.2 Significant Impacts

CEQA defines a significant impact on the environment as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." As discussed in more detail in Chapter 4.0 of this EIR, impacts in the following topic areas would be potentially significant without the implementation of mitigation measures, but would be reduced to a less than significant level if the mitigation measures recommended in this report are implemented:

- Biological Resources
- Noise
- Tribal Cultural Resources

Impacts related to all other environmental topics were determined to have, (1) no impact OR, (2) a less than significant impact, and did not warrant mitigation.

2.4.3 Significant Unavoidable Impacts

The mitigation identified in this EIR eliminates or reduced potential environmental impacts to a less than significant level; therefore, the project would not result in any significant and unavoidable impacts.

2.4.4 Cumulative Impacts

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited, but cumulatively significant. These impacts can result from the proposed project when combined with other past, present, or reasonably foreseeable future projects. As described in each environmental topic addressed in Chapter 4.0 of this Draft EIR, the cumulative impacts analysis is based on information provided by the City on currently planned, approved, or proposed projects and regional projections for the area. All identified impacts of the proposed project would be individually limited and would not be cumulatively considerable. Cumulative impacts would be less than significant.

2.4.5 Alternatives to the Project

In accordance with CEQA and the *State CEQA Guidelines* (Section 15126.6), an EIR must describe a reasonable range of alternatives to the project, or to the project's location, that could attain most of the project's basic objectives while avoiding or substantially lessening any of the significantly adverse environmental effects of the project. The project intends to satisfy the following objectives:

- Create a distinctive community design with a well-designed entry, streetscapes, walls, and entry monument.

- Provide for architectural diversity within the community with varying residential floor plans and architectural styles.

- Provide for on-site recreational opportunities for residents through provision of common area open space within the community offering active and passive recreational amenities for all age groups.

- Design a development plan which ensures the community is adequately served by public facilities, infrastructure, and utilities without the need for extensions or improvements to existing public facilities.

- Incorporate green and sustainable design features into the development plan.

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative."

The two alternatives to the proposed project discussed and analyzed in Chapter 6.0 of this EIR are:

- **No Project Alternative:** Under the No Project alternative, the project site would continue to be undeveloped. No modifications to the circulation network or infrastructure would occur.

- **Reduced Density/Conservation Alternative:** Under the Reduced Density/Conservation alternative, the project site would be developed with residential uses, similar to the proposed project, but would be reduced in size in order to avoid impacts to the Scale broom scrub natural community on the project site. Under this alternative, the project site would be developed with 45 single-family residential units. Infrastructure improvements and the extension of 15th Street would still occur, although a reduced amount of open space would be provided on the project site.

2.5 DOCUMENTS INCORPORATED BY REFERENCE

CEQA permits the incorporation by reference of all or portions of other documents that provide information relevant to the project and the environmental analysis. Documents incorporated by reference must be available for public review at an office of the Lead Agency or other public location. The documents identified below are incorporated by reference, and where relevant, the information therein has been summarized throughout the EIR.

2.5.1 City of Upland General Plan (2015)

The State of California mandates that every city and county adopt a General Plan. The City's General Plan is considered its blueprint for the future. It lays out the vision for how the City would develop. The General Plan itself, "…provides a comprehensive and integrated 'constitution' for growth and preservation in the City, which forms the basis for all other City plans, programs, ordinances and operations."

The individual elements of the City's General Plan may be reviewed at the City's Development Services Department and can be accessed online at: https://www.uplandca.gov/general-plan-map

2.5.2 City of Upland General Plan Final Environmental Impact Report (2015)

The City of Upland General Plan Final EIR summarizes the potential environmental impacts associated with implementation of the City's General Plan, including growth-inducing and

cumulative impacts. The City's General Plan Final EIR is available for review at the City's Community Development Department and can be accessed online at: https://www.uplandca.gov/uploads/files/DevelopmentServices/Environmental%20Review%20Documents/FINAL%20GENERAL%20PLAN%20EIR%20with%20comments%20COMBINED.pdf.

2.6 TECHNICAL STUDIES

A number of technical reports have been prepared to assess specific issues that may result from the construction and operation of the project. As relevant, the EIR analysis is supported by information obtained from the following technical studies, which have been included as appendices to this EIR.[4]

- B: Villa Serena Specific Plan
- C: Air Quality-Greenhouse Gas Assessment
- D-1: Biological Resources Technical Report
- D-2: San Bernardino Kangaroo Rat and California Gnatcatcher Assessment
- D-3: Nesting Bird and California Gnatcatcher Assessment
- D-4: Aquatic Resources Delineation Report
- E: Groundwater Recharge Data
- F: Noise Assessment
- G-1: Traffic Analysis
- G-2: VMT Screening Evaluation

Due to the voluminous nature of the supporting technical information, complete copies of the following appendices are available for review online at the City's website at: https://www.uplandca.gov/environmental-review**.** A complete listing of all material cited in the Draft EIR is provided in Chapter 7.0.

2.7 PUBLIC REVIEW OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

The EIR has been provided to all parties who have previously requested notice.[5] The Notice of Completion and Notice of Availability (NOA) of the Draft EIR have been distributed as required by CEQA. During the 45-day public review period, the Draft EIR and technical appendices have been made available for review. The Draft EIR and supporting documentation is accessible for review on the City's website at https://www.uplandca.gov/environmental-review and at the following locations during the public review period:

City of Upland
Development Services Department/Planning Division
460 N. Euclid Avenue
Upland, CA 91786
8:00 a.m.–6:00 p.m., Monday–Thursday

[4] Appendix A contains the following materials: NOP, NOP comment letters, Public Scoping Meeting material, and the Initial Study.

[5] Public Resources Code §21092(b)(3).

Upland Public Library
450 North Euclid Avenue
Upland, CA 91786
Monday-Thursday 10 a.m.–7:00 p.m.
Friday-Saturday 10:00 a.m.–6:00 p.m.

Written comments and email comments related to this EIR should be addressed to:

City of Upland
Joshua Winter, Senior Planner
City of Upland Development Services Department/Planning Services
Direct: (909) 931-4143 | Fax: (909) 931-4321
jwinter@uplandca.gov

After the 45-day public review period, written responses to all comments on the Draft EIR will be prepared. These responses will be available for review for a minimum of 10 days prior to the public hearings before the City's Planning Commission and City Council, at which time the certification of the Final EIR will be considered. The Final EIR (which will include the Draft EIR, the public comments and responses to the Draft EIR, and findings) will be included as part of the environmental record used during the consideration of the project by the City decision-makers.

2.8 MITIGATION MONITORING AND REPORTING PROGRAM

When mitigation measures are required to avoid or reduce the severity of significant impacts, State law requires the adoption of a Mitigation Monitoring and Reporting Program (MMRP). The MMRP is intended to ensure compliance during implementation of the program. An MMRP will be prepared for this EIR to comply with the requirements of State law[6] and considered by the City concurrently with certification of the Final EIR for the proposed project.

2.9 IMPACT AND MITIGATION SUMMARY TABLES

Information in Table 2.A, Impact and Mitigation Summary, summarizes the recommended mitigation measures and COAs from the Initial Study and the mitigation measures identified in Chapter 4.0 of this EIR. Table 2.A is arranged in four columns: (1) impacts, (2) level of significance without mitigation, (3) mitigation measures, and (4) level of significance with mitigation.

For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter 4 and the Initial Study (Appendix A-5).

6 Public Resources Code §21081.6.

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
AESTHETICS (EIR Section 4.1)			
Threshold AES-1: Have a substantial adverse effect on a scenic vista.	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
Threshold AES-3: Substantially degrade the existing visual character or quality of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, it would conflict with applicable zoning and other regulations governing scenic quality	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold AES-4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
AGRICULTURE AND FORESTRY RESOURCES (Initial Study Section 3.3.2)			
a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
c. 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	No Conditions of Approval or Mitigation Measures are required.	No Impact
d. Would the project result in the loss of forest land or conversion of forestland to non-forest use?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
e. 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	No Conditions of Approval or Mitigation Measures are required.	No Impact
AIR QUALITY (EIR Section 4.2)			
Threshold AIR-1 The proposed project would conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
Threshold AIR-2: The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
Threshold AIR-3: The proposed project would expose sensitive receptors to substantial pollutant concentrations?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
Threshold AIR-4: Implementation of the proposed project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
BIOLOGICAL RESOURCES (EIR Section 4.3)			
Threshold BIO-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 Wildlife or U.S. Fish and Wildlife Service?	Significant	**Mitigation Measure BIO-1** **Coastal Whiptail.** To mitigate potential impacts to coastal whiptail, the project applicant shall retain a CDFW approved qualified biologist to be present during initial project vegetation clearing and soil disturbance activities. In the event this species is observed during ground disturbance, the project biologist shall halt work in the vicinity of the find until such time relocation activities are complete. The qualified biologist shall be appropriately equipped to capture present coastal whiptail and any other special-status species from areas of ground disturbance and will relocate them from the area of disturbance to the conservation area at the eastern end of the basin. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety.	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures		Level of Significance with Mitigation
		Mitigation Measure BIO-2	**Nesting Birds.** A pre-construction nesting survey shall be conducted by a CDFW approved qualified biologist at the appropriate time of day/night, during appropriate weather conditions, no more than **3 days prior to the initiation of project activities**. Surveys shall encompass all suitable areas including trees, shrubs, bare ground, burrows, cavities, and structures. Survey duration shall take into consideration the size of the property; density, and complexity of the habitat; number of survey participants; survey techniques employed; and shall be sufficient to ensure the data collected is complete and accurate. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior (e.g., copulation, carrying of food or nest materials, nest building, removal of fecal sacks, flushing suddenly from atypically close range, agitation, aggressive interactions, feigning injury or distraction displays, or other behaviors). If a nest is suspected, but not confirmed, the qualified biologist shall establish a disturbance-free buffer until additional surveys can be completed, or until the location can be inferred based on observations. The qualified biologist shall not risk failure of the nest to determine the exact location or status and will make every effort to limit the nest to potential predation as a result of the survey/monitoring efforts (e.g., limit number of surveyors, limit time spent at/near the nest, scan the site for potential nest predators before approaching, immediately depart nest area if indicators of stress or agitation are displayed). If a nest is observed, but thought to be inactive, the qualified biologist shall monitor the nest for 1 hour (4 hours for raptors during the non-breeding season) prior to approaching the nest to determine status. The qualified biologist shall use their best professional judgement regarding the monitoring period and whether approaching the nest is appropriate. In the event an active nest is confirmed, the qualified biologist shall immediately establish a conservative buffer surrounding the nest based on their best professional judgement and experience. The buffer shall be delineated to ensure that its location is known by all persons working within the vicinity but shall not be marked in such a manner	

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
		that it attracts predators. Once the buffer is established, the qualified biologist shall document baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance. Following documentation of baseline conditions, the qualified biologist may choose to adjust the buffer based on site characteristics, stage of reproduction, and types of project activities proposed at/near that location. The qualified biologist(s) shall monitor the nest at the onset of project activities, and at the onset of any changes in project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the qualified biologist determines that project activities may be causing an adverse reaction, the qualified biologist shall be empowered to adjust the buffer accordingly. The qualified biologist(s) shall be onsite daily to monitor all existing nests, the efficacy of established buffers, and to document any new nesting occurrences. The qualified biologist shall document the status of all existing nests, including the stage of reproduction and the expected fledge date. If a nest is suspected to have been abandoned or failed, the qualified biologist shall monitor the nest for a minimum of 1 hour (4 hours for raptors), uninterrupted, during favorable field conditions. If no activity is observed during that time, the qualified biologist may approach the nest to assess the status. Under the direction of the qualified biologist, activities to discourage nesting on the project site, including moving equipment and materials daily, covering material with tarps or fabric, and securing all open pipes and construction materials, shall be permitted. The qualified biologist shall ensure that none of the materials used pose an entanglement risk to birds or other species. As established under any agreement between the Applicant and the CDFW, the qualified biologist shall prepare summary reports regarding nesting species identified onsite, discovery of any of new nests, the status/outcome of any previously	

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures		Level of Significance with Mitigation
			identified nest, buffer distances established for each nest, and any adjustments made to established buffers. The CDFW shall be notified within 24 hours of project activities result in the abandonment of, or damage to a nest.	
		Mitigation Measure BIO-3	**Burrowing Owl.** A burrowing owl pre-construction survey shall be conducted by a CDFW approved qualified biologist at the appropriate time of day/dawn, during appropriate weather conditions, **no more than 14 calendar days prior to the initiation of project activities.** The survey shall include inspection of all burrows that exhibit typical characteristics of owl activity such as owls themselves, burrows, and owl sign at burrow entrances, including pellets, feces or other "ornamentation", feathers, prey remains, whitewash, etc. Survey duration shall take into consideration the size of the property; density and complexity of the habitat; number of survey participants; survey techniques employed; and shall be sufficient to ensure the data collected is complete and accurate. In the event an active or occupied burrow is confirmed, the qualified biologist shall immediately establish a conservative buffer surrounding the burrow based on their best professional judgement and experience. The buffer shall be delineated to ensure that its location is known by all persons working within the vicinity but shall not be marked in such a manner that it attracts predators. Once the buffer is established, the qualified biologist shall document baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance. Following documentation of baseline conditions, the qualified biologist may choose to make adjustments to the buffer based on site characteristics, stage of reproduction, and types of project activities proposed at/near that location. The qualified biologist shall monitor the burrow at the onset of project activities and at the onset of any changes in project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the qualified biologist determines that Project activities may be	

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures		Level of Significance with Mitigation
			causing an adverse reaction, the qualified biologist shall be empowered to adjust the buffer accordingly. In the event burrowing owls are detected on or adjacent to the project site and cannot be completely avoided, a Burrowing Owl Mitigation and Monitoring Plan shall be submitted to CDFW for review and approval prior to disturbance of the owl(s). The Burrowing Owl Mitigation and Monitoring Plan shall include the number and location of occupied burrow sites that will be disturbed by the project; proposed relocation, monitoring, and minimization actions; and details on adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation of artificial burrows (numbers, location, and type of burrows) shall be identified in the Burrowing Owl Mitigation and Monitoring Plan. The Burrowing Owl Mitigation and Monitoring Plan shall also include an impact analysis consistent with the 2012 *Staff Report on Burrowing Owl Mitigation* and shall identify mitigation including acquisition, permanent protection, and funding of mitigation lands for the loss of burrowing owl habitat. The applicant shall implement the Burrowing Owl Mitigation and Monitoring Plan following CDFW review and approval.	
Threshold BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the United States Fish and Wildlife Service?	Significant	**Mitigation Measure BIO-4**	**Streambed Alternation Agreement.** Prior to the commencement of ground disturbance, the project applicant (the CDFW permittee) shall provide evidence to the City and the CDFW that applicable provisions outlined in the final Streambed Alteration Agreement have been appropriately satisfied.	Less Than Significant
		Mitigation Measure BIO-5	**Habitat Mitigation and Monitoring Plan.** Within 3 months of project completion, the applicant or the City (as determined by CDFW) shall implement the CDFW approved Habitat Mitigation and Monitoring Program (HMMP) to create 1.2 acres of mule fat scrub and to enhance 0.3 acre of wetland within 1.5 acres at the far eastern portion of the basin (the "conservation area" or "mitigation area"). This area shall be maintained and managed to improve habitat quality and shall meet the success criteria established in the CDFW approved HMMP. As designated by the CDFW, the	

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
		City, or the applicant (CDFW permittee) shall report on the results of the maintenance and monitoring of the mitigation area pursuant to the terms of the Streambed Alteration Agreement. or **Mitigation Measure BIO-6** **Purchase of Mitigation Bank Credits**. No later than 30 days prior to the initiation of project activities, the applicant (CDFW Permittee) shall provide evidence to the City and CDFW that the 1.5 acres of streambed enhancement credits have been purchased from CDFW approved mitigation bank(s). The applicant (CDFW Permittee) shall obtain CDFW approval regarding the choice of the mitigation bank prior to credit purchase.	
Threshold BIO-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?	Significant	**Mitigation Measure BIO-5 or BIO-6.**	Less Than Significant
Threshold BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Significant	**Mitigation Measures BIO-2 and BIO-3.**	Less Than Significant
Threshold BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold BIO-6 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
CULTURAL RESOURCES (Initial Study Section 3.3.5)			
a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	Significant	**Mitigation Measure CUL-1** In the event that pre-contact cultural resources are discovered during project activities, all work in the immediate vicinity of the of the find (within a 100-foot buffer) shall cease and a qualified archaeologist meeting Secretary of the Interior standards shall be hired to assess the find. Work on the other portions of the project outside	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
		of the buffered area may continue during this assessment period. Additionally, the San Manuel Band of Mission Indians (SMBMI) Cultural Resource Department shall be contacted as detailed within **Mitigation Measure TCR-1**, if any such find occurs and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regard to significance and treatment. If significant Native American historical resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to the SMBMI for review and comment, as detailed in **Mitigation Measure TCR-1**. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code Section 7050.5 and that code enforced for the duration of the project.	
b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Significant	**Mitigation Measure CUL-1.**	Less Than Significant
c. Would the project disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required, though compliance with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98 is required.	Less Than Significant
ENERGY (Initial Study Section 3.3.6)			
a. 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	The project would comply with the CALGreen Code requirements and Title 24 efficiency standards**,** which would further improve energy efficiency during operation.	Less Than Significant
b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less Than Significant	The project would be required to comply with CBC and CALGreen Code in accordance with Title 11 (Zoning and Development) of the City Municipal Code pertaining to energy conservation standards in effect at the time of construction.	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
GEOLOGY AND SOILS (Initial Study Section 3.3.7)			
a.i) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (i.) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
a.ii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (ii) Strong seismic ground shaking?	Less Than Significant	**Standard Condition G-1** Prior to the approval of grading and/or building permits, the Applicant shall provide evidence to the City for review and approval that on-site structures, features, and facilities have been designed and will be constructed in conformance with applicable provisions of the most current edition of the CBC at the time of construction and the recommendations cited in Section 5 of the project-specific Geotechnical and Infiltration Evaluation. Geotechnical recommendations include, but are not limited to, remedial earthwork and/or ground improvement to provide a sufficient layer of engineered fill or densified soil beneath the structural footings/foundations, as well as proper surface drainage devices and erosion control. Verification testing must be performed upon completion of ground improvements to confirm that the compressible soils have been sufficiently densified. This condition shall be implemented to the satisfaction of the City Building and Safety Division.	Less Than Significant
a.iii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (iii) Seismic-related ground failure, including liquefaction?	Less Than Significant	**Standard Condition G-1.**	Less Than Significant
a.iv) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (iv) Landslides?	Less Than Significant	**Standard Condition G-1.**	Less Than Significant
b. Would the project result in substantial soil erosion or the loss of topsoil?	Less Than Significant	**Standard Condition G-1.**	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
c. Would the project be located on a geologic unit or soils 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?	Less Than Significant	**Standard Condition G-1.**	Less Than Significant
d. Would the project be located in 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	**Standard Condition G-1.**	Less Than Significant
e. 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?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
f. Would the Development Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Significant	**Mitigation Measure GEO-1** Prior to the issuance of grading permits, the maximum depth of ground-disturbing activities shall be provided to the City. If ground disturbance in excess of 15 feet is required, the Applicant shall provide evidence to the City that a qualified paleontologist has been retained. Upon review of Project materials, the qualified paleontologist shall identify those areas of the Site that require monitoring. In the event that paleontological resources are unearthed during ground-disturbing activities, the qualified paleontologist shall halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated. A buffer area shall be established around the find within which construction activities shall not be allowed to continue. The buffer area parameters will be determined by the project paleontologist in consultation with the City and project proponent, but shall not be less than 100 feet. Work shall be allowed to continue outside the buffer area. The paleontologist shall determine the need for paleontological construction monitoring in the vicinity of the find thereafter. All paleontological resources unearthed by project construction activities shall be evaluated by a qualified paleontologist. At the paleontologist's discretion, and to	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
		reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing and evaluation of the find. The project proponent shall coordinate with the paleontologist and the City to develop an appropriate treatment plan for the resources. Preservation in place (i.e., avoidance) shall be considered the preferred treatment measure. If preservation in place is not feasible, treatment may include the implementation of paleontological data recovery/salvage excavations to remove the resource from the project site along with subsequent laboratory processing and analysis of the fossil specimens. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated for final repository. Any fossils collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the San Bernardino County Museum, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, they shall be donated to a local school in the area for educational purposes. Accompanying notes, maps, and photographs shall also be filed at the repository and/or school. Following the completion of the above measures, the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the project proponent to the City, the San Bernardino County Museum, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the Project and required mitigation measures. This measure shall be implemented to the satisfaction of the City Planning Division.	
GREENHOUSE GAS EMISSIONS (EIR Section 4.4)			
Threshold GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
Threshold GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
HAZARDS AND HAZARDOUS MATERIALS (Initial Study Section 3.3.9)			
a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant	Compliance with all applicable federal, state, and local laws would ensure potential impacts related to the routine transport, use, or disposal of hazardous materials	Less Than Significant
b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less Than Significant	Compliance with all applicable federal, state, and local laws, including but not limited to Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR,	Less Than Significant
c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing proposed school?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would it create a significant hazard to the public or the environment?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
e. For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
f. Would project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
g. Would the project expose people or structures, either directly or indirectly, to a significant risk or loss, injury or death involving wildland fires?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
HYDROLOGY AND WATER QUALITY (EIR Section 4.5)			
Threshold HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold HYD-3: Substantially alter the existing drainage patter of the sire or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or, (iv) impede or redirect flood flows?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold HYD-4: In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold HYD-5: Conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
LAND USE AND PLANNING (Initial Study Section 3.3.11)			
a. Would the project physically divide an established community?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
MINERAL RESOURCES (Initial Study Section 3.3.12)			
a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
NOISE (EIR Section 4.6)			
Threshold NOI-1: Generation 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?	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
Threshold NOI-2: Generation excessive ground-borne vibration or ground-borne noise levels?	Significant	**Mitigation Measure NOI-1** **Vibration Reduction.** During all construction-related activities, the project applicant shall not use large, loaded trucks or heavy mobile equipment greater than 80,000 pounds within 50 feet of occupied residences. Instead, small rubber-tired or alternative equipment, as well as soil compaction equipment shall be used during project construction to reduce vibration effects on nearby structures and their occupants. The City of Upland Community Development Services Director, of their designee, shall ensure this prohibition has been included in the plan set prior to the issuance of any construction-related permits.	Less Than Significant
Threshold NOI-3: Expose people residing or working in the project area to excessive noise levels from a private airstrip or an airport with a land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
POPULATION AND HOUSING (Initial Study Section 3.3.14)			
a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
example, through extension of roads or other infrastructure)?			
b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
PUBLIC SERVICES (Initial Study Section 3.3.15)			
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:			
a. Fire Protection?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
b. Police Protection?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
c. Schools?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
d. Parks?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
e. Other Public Facilities?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
RECREATION (Initial Study 3.3.16)			
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
TRANSPORTATION (EIR Section 4.7)			
Threshold TRA-1: Conflicts with a program, plan, ordinance, or policy related to transit would be considered significant if the project would: 1. Disrupt existing transit services or facilities. This includes disruptions caused by project	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
access points or staging areas near streets used by transit and transit stops/shelters; or 2. Interfere with planned transit services or facilities; or 3. Conflict **or create inconsistencies with adopted transit system plans, guidelines, policies, or standards.**			
Threshold TRA-2: The proposed project would result in a significant project-generated VMT impact if either of the following conditions occur: 1. The baseline project-generated VMT per service population exceeds the City of Upland General Plan Buildout VMT per service population; or 2. The cumulative project-generated VMT service population exceeds the City of Upland General Plan Buildout VMT per service population.	Less than Significant	No Conditions of Approval or Mitigation Measures are required.	Less than Significant
Threshold TRA-3: Impacts related to hazards would be considered significant if the project would: 1. Substantially increase hazards due to a geometric design feature; or 2. Result in an incompatible land use.	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
Threshold TRA-4: Impacts related to emergency access would be considered significant if the project would: 1. Limit emergency vehicle access routes or roadway facilities; or 2. Create a project site that is inaccessible to emergency vehicles.	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
TRIBAL CULTURAL RESOURCES (EIR Section 4.8)			
Threshold TCR-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	Significant	The following measures have been identified to address consultation with the Gabrieleño Band of Mission Indians – Kizh Nation (Kizh Nation): **Mitigation Measure TCR-1 Retain a Native American Monitor Prior to Commencement of Ground Disturbance Activities.** a. The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).		Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. b. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity. c. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project applicant/lead agency upon written request to the Tribe. d. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or	

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
		development/construction phase at the project site possesses the potential to impact Kizh TCRs. **Mitigation Measure TCR-2** **Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial).** Upon discovery of any Tribal Cultural Resource, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor and/or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic purposes. **Mitigation Measure TCR-3** **Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects** a. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute. b. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource Code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed. c. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2). d. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. e. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance. The following measures have been identified to address consultation with the Yuhaaviatam of San Manuel Nation (YSMN):	

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
		Mitigation Measure TCR-4 The Yuhaaviatam of San Manuel Nation (YSMN) Cultural Resources Department shall be contacted, as detailed in Mitigation Measure CUL-1, of any pre-contact and/or historic-era cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended, 2015), by a Monitoring and Treatment Plan (Plan) shall be created by qualified archaeologist, in coordination with YSMN. All subsequent finds shall be subject to the Plan. The Plan shall allow for a monitor to be present that represents YSMN for the remainder of the project, should YSMN elect to place a monitor on-site. **Mitigation Measure TCR-5** Any and all archaeological/cultural documents created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Lead Agency for dissemination to YSMN. The Lead Agency and/or applicant shall, in good faith, consult with YSMN throughout the life of the project.	
Threshold 4.18-2: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Significant	**Mitigation Measures TCR-1 through TCR-5, as applicable**	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
UTILITIES AND SERVICE SYSTEMS (Initial Study Section 3.3.19)			
a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Significant	**Mitigation Measure HYD-3** Prior to the issuance of a grading permit, the Applicant shall submit a Final Water Quality Management Plan (WQMP) to the City of Upland for review and approval. Prior to grading permit approval, the project shall provide evidence that the Project design features identified in the Final WQMP have been fully incorporated into the project plans. In accordance with the *Technical Guidance Document for Water Quality Management Plans* prepared for the County of San Bernardino Areawide Stormwater Program, National Pollutant Discharge Elimination System Permit Number CAS618036, Order Number R8-2010-0036, the Final WQMP shall confirm performance standard calculations for each of the project site's drainage areas. Specifically, the Final WQMP shall detail low impact development (LID) best management practices (BMPs) designed to retain the project Site's minimum storm water treatment capacity and design capture volume to ensure post-development storm water runoff volume or time of concentration for the 2-year frequency storm shall not exceed that of the pre-development condition by more than five percent. The proposed LID BMPs specified in the Final WQMP shall be incorporated into the grading and development plans submitted to the City for review and approval. Periodic maintenance of any required BMPs, including landscaped areas, during project occupancy and operation shall be in accordance with the schedule outlined in the WQMP. This measure shall be implemented to the satisfaction of the City Public Works Department and Planning Division as appropriate.	Less Than Significant
b. Would there be sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
c. 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 demand in addition to the provider's existing commitments?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant

Table 2.A: Impact and Mitigation Summary

Environmental Impacts	Level of Significance without Mitigation	Conditions of Approval/Project Design Features/Regulatory Compliance Measures/Mitigation Measures	Level of Significance with Mitigation
d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant	No Conditions of Approval or Mitigation Measures are required.	Less Than Significant
WILDFIRE (Initial Study Section 3.3.20)			
a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact
d. Would the project expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact	No Conditions of Approval or Mitigation Measures are required.	No Impact

CALGreen = California Green Building Standards Code
CCR = California Code of Regulations
CDFW = California Department of Fish and Wildlife
PRC = Public Resources Code

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3.0 PROJECT DESCRIPTION

This chapter describes the proposed Villa Serena Specific Plan Project (project) evaluated in this Environmental Impact Report (EIR). The proposed project includes a General Plan Amendment (GPA) and zone change to change the General Plan Land Use designation and zoning district for the project site, construction of 65 single-family residential units, and various on- and off-site infrastructure improvements. These improvements would be implemented through the proposed Villa Serena Specific Plan (Specific Plan).

Pursuant to Section 15124(c) of the *State CEQA Guidelines*, this chapter begins with a description of the proposed project's location, objectives, and technical, economic, and environmental characteristics. This is followed by a summary of the intended uses of the EIR, including a list of agencies that are expected to use the EIR in their decision making, a list of required permits and other approvals required to implement the project, and a list of related environmental review and consultation requirements required by federal, State, or local laws, regulations, or policies.

3.1 PROJECT LOCATION AND EXISTING SETTING

The project site encompasses the existing, 20.3-acre 15th Street control detention basin (basin) located south of the Upland Hills Country Club in the central-eastern portion of Upland in San Bernardino County, California (see **Figure 3.1**). The City of Upland (City) has determined the western portion of the basin is a surplus parcel. The proposed residential uses would be developed on this 9.16-acre surplus parcel. The remaining portion of the basin is adequate for continued flood control operations pursuant to the completion of basin modifications that are a component of this project. Maintenance access for the flood control facilities would be provided by a gated entry to the basin at the eastern edge of the developed site. The project site encompasses the following areas:

- An undeveloped 9.16-acre portion of the 15th Street flood control basin on the northeast corner of the intersection of Fernando Avenue and East 15th Street. This area is the planned for the development of 65 single-family residences, private community facilities, and ancillary features (residential development area).

- A 6.85-acre area within the 15th Street flood control basin that is outside but directly east of the footprint for residential development. Modifications to this portion of the basin (see Section 3.3.7) would retain the basin's stormwater and flood control capacity (modified basin).

- A 4.29-acre area at the extreme eastern boundary of the basin. This portion of the existing basin would remain unaffected by project activities. As detailed on the precise grading plan prepared for the project, no work, access, or storage is allowed within this area (conservation area).

- A 0.78-acre area for the construction of the 15th Street extension and a public "pocket park" near the north end of Fernando Avenue

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Project Site

FIGURE 3.1

N

0 625 1250

FEET

SOURCE: Google (2022), RCA (2018)

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Villa Serena Specific Plan

Regional and Project Location

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The areas surrounding the project site consist of a mix of land uses, including residential, recreational, commercial, and public utilities. The project site is bounded on the north by the Upland Hills Country Club, to the south by 15th Street and residential development, and to the west by residential development. Notable adjacent land uses include the Mountain View residential gated community to the west, the Southern California Edison (SCE) Padua Substation to the northwest, and the Dry Dock Depot RV and Boat Storage to the southwest. **Figure 3.2** identifies the on-site and surrounding land uses.

3.1.1 Site Characteristics and Current Site Conditions

The project site is currently undeveloped with a flat to gently sloping topography. There are no public access points to the project site except for a gated maintenance entry east of 15th Street/13th Avenue. There is currently no direct connectivity to Campus Avenue via 15th Street. Chain-link fences and backyard fences and walls enclose parts of the west, east, and southern boundaries of the project site, and the northern boundary of the project site consists of a row of native trees separating the basin area from the adjacent Upland Hills Country Club.

3.1.2 General Plan and Zoning

The City's General Plan designates the project site as "Public Utilities-Flood Control/Recharge" (PU-FC/R). The PU-FC/R land use designation allows for land uses that include city and neighborhood parks, flood control channels, and reservoir uses.

The project site is zoned "Public-Flood Control" (PB-FC). Permitted uses within the Public (PB) zoning district include public schools; parks and playgrounds; community centers; museums, cultural, and interpretive facilities; public libraries; governmental offices; police and fire stations; and hospitals. Public uses permitted with the approval of a Conditional Use Permit (CUP) include large-scale facilities such as cemeteries, correctional institutions, major utilities, and other similar public works infrastructure and facilities.

3.1.3 Surrounding Land Uses

As stated above, the project site is in central-eastern Upland in an area surrounded by residential, recreational, commercial, and public utility uses (see **Figure 3.2**). Surrounding land uses are further described below.

- **North of the Project Site:** The project site is bordered to the north by the Upland Hills Country Club, which consists of a golf course and related private recreational facilities, and a single-family residential community that is bisected by East 16th Street. Farther north are additional single-family residential uses, including the Colonies, which is a master-planned single-family residential community.

- **East of the Project Site:** The project site is bound to the east by single-family residential uses and Cucamonga Creek, across which are additional single-family residential uses Red Hills Country Club. Single-family residential uses and Cucamonga Creek (channelized and concrete-lined) are farther east.

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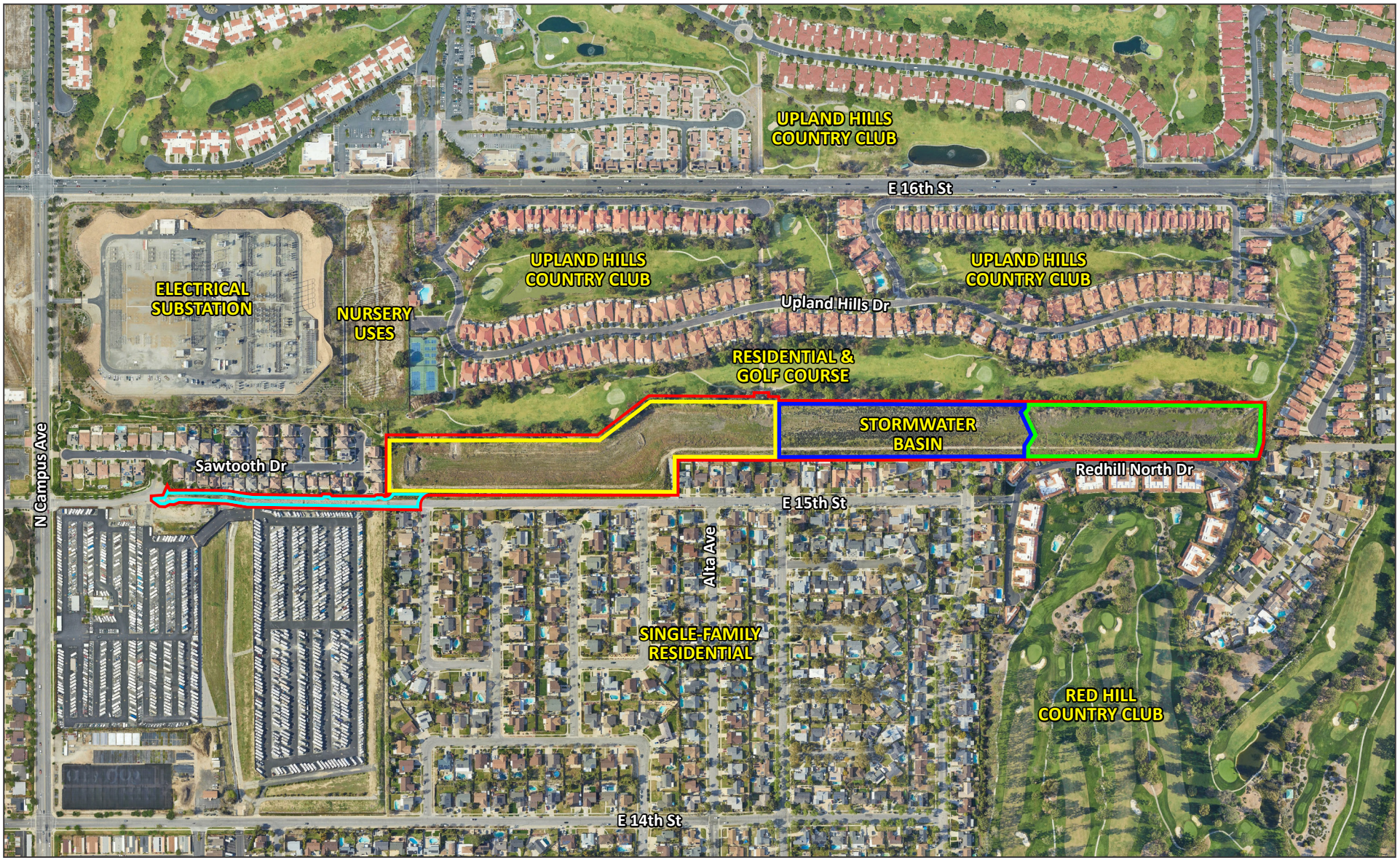

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LEGEND

- Project Site Boundary
- Residential Development Area
- Conservation Area
- Modified Basin
- 15th St Extension and Public Improvements

0 312.5 625

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SOURCE: Google Earth, 2023

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FIGURE 3.2

Villa Serena Specific Plan

Surrounding Land Use

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- **South of the Project Site:** The project site is bordered to the south by 15th Street, across which are single-family residential uses and a dry dock boat storage facility. Farther south of the project site is the Foothills Knolls STEM Academy of Innovation, a transitional kindergarten through 8th grade school in the Upland Unified School District (UUSD), and commercial uses along East Foothill Boulevard.

- **West of the Project Site:** The project site is bound to the west by single-family residential uses and the SCE Padua Substation to the northwest. Farther east is North Campus Avenue, across which are commercial and single-family residential uses as well as the Sierra Vista Elementary School, which is also part of the UUSD.

3.2 SPECIFIC PLAN

The proposed project would include implementation of the proposed Villa Serena Specific Plan. The proposed Specific Plan would consist of the development of the project site (also referred to as the "plan area") with 65 single-family detached residential units, on-site active and passive recreational amenities, the extension of improvements along 15th Street, and construction of off-site public open space improvements. The City has determined the 9.16-acre portion of the flood control detention basin comprising the project site to be a surplus parcel. The remaining 11.1 acres of the flood control detention basin would be adequate for continued flood control operations pursuant to completion of modifications to portions of the basin made as part of the proposed project. Implementation of the proposed Specific Plan would require a General Plan Amendment and rezoning for the site. Individual components of the proposed project are further discussed below.

3.2.1 Specific Plan Purpose and Authority

California Government Code (Title 7, Division 1, Chapter 3, Article 8, Section 65450-65457, permits the adoption and administration of a specific plan as an implementation tool for elements contained in the local general plan. Specific plans must demonstrate consistency in regulations, guidelines, and programs with the goals and policies set forth in the general plan. The Government Code specifies that specific plans may be adopted either by resolution or by ordinance, and that the specific plan must be consistent with the general plan. The Government Code sets forth the minimum requirements and review procedures for specific plans including provision of a land use plan, an infrastructure and public services plan, criteria and standards for development, and implementation measures. The Government Code also states that specific plans may address any other subjects which, in the judgment of the city, are necessary or desirable for implementation of the general plan. In September 2015, the City adopted the "City of Upland General Plan", which addresses the State-mandated General Plan elements.

The Villa Serena Specific Plan (Specific Plan) establishes land use and development regulations designed to govern development of the project. In instances where the Specific Plan is silent, regarding a specific development standard or procedure for implementing the Specific Plan, Upland Municipal Code Zoning Code Title 17 (Planning and Zoning) would prevail. The Specific Plan provides a "blueprint" for development of the project establishing permitted uses, a land use plan, the development requirements, and design criteria for land development. The Specific Plan also establishes the procedures and requirements enabling City review and approval of development of

the project, thereby ensuring that the City's General Plan, as amended for the project site, is implemented.

3.2.2 Specific Plan Organization

The Specific Plan is organized into six sections, as described below.

- **Section 1: Introduction** includes information about the project area's context and location, purpose of a Specific Plan, instructions on how to use the Specific Plan, and summary of the community engagement process.
- **Section 2: Development Plan** describes the proposed planned residential community and infrastructure improvements, including circulation, water, sanitary sewer, stormwater, and public utilities. Modifications to the flood control basin are also described.
- **Section 3: Development Regulations** establishes the minimum standards and requirements for development of residential uses, common area open space, landscaping, fences, walls, signage, and lighting.
- **Section 4: Design Criteria** establishes architectural and landscape design principles and requirements for the proposed project.
- **Section 5: Implementation and Administration** describes the methods for implementation of development within the project site and administration of the Specific Plan.
- **Section 6: General Plan Consistency** describes how the Specific Plan is consistent with the regulations, guidelines, and programs within the General Plan.

3.2.3 Specific Plan Development Regulations

As described previously, the Specific Plan includes regulations that govern design and development within the project site. These regulations establish the minimum standards and requirements for development of residential uses, common area open space, landscaping, fences, walls, signage, and lighting within the project site. The following development standards are included in the proposed Specific Plan: (1) General Site Development Standards; (2) Green and Sustainable Development Standards; (3) Permitted Uses and Structures; (4) Residential Development Standards; (5) Temporary Uses; (6) Open Space Development Standards; (7) Landscaping, Fencing, and Walls; (8) Signage; and (9) Lighting. The General Site Development Standards allow for a maximum of 65 residential units to be developed on the project site.

3.3 PROJECT CHARACTERISTICS

3.3.1 Residential Development

The proposed Specific Plan envisions and provides for development of a planned residential community on the project site. Approximately 9.16 acres of the project site would be developed with 65 single-family detached residential units for a residential density of 7.10 dwelling units per acre. Residential lots would range in size from 3,337 to 5,048 square feet. Various floor plans would

provide up to 2,886 square feet of living area. The residential units would have a maximum height of 35 feet and would include up to four bedrooms[1].

The residential architecture of the proposed development would feature a series of styles that are commonly found in Southern California, including Spanish, Italianate, and French Country, which are set to vary among the planned homes. Varying materials and color palettes as well as different floor plans would be used to accomplish elevation variations that would be required for each architectural style. Each architectural style would also have its own design standards and guidelines, as outlined in the Specific Plan, which would be followed to enhance the community's overall appeal and value.

3.3.2 Access and Circulation

Regional access to the project site is provided by Foothill Boulevard, which is 0.75 mile to the south, and Campus Avenue, which is 0.25 mile to the west (via 15th Street). State Route 210 (SR-210) is 1.13 miles north of the project site, and Interstate 10 (I-10) is 2.14 miles south of the project site.

The following section describes access and circulation changes that would result with implementation of the proposed project, including vehicular access, modifications to 15th Street, and pedestrian and bicycle access.

3.3.2.1 Vehicular Access

Vehicular access to the project site would be provided to/from 15th Street at two locations. Primary (gated) access would be through the extension of 15th Street, which would allow residential entry from Campus Avenue. This access would be installed on 0.63 acre of unimproved land located off site connecting the project to the current terminus of East 15th Street through to Campus Avenue. A second gated access at the eastern boundary of the project site that would allow residential egress and full emergency access to/from 15th Street. **Figure 3.3** illustrates the project's proposed entry and circulation plan.

On-site vehicular circulation would consist of a private street (Coyote Run Drive) varying in width from approximately 26 to 38 feet. Portions of the street would include on-street parking. A 5-foot-wide sidewalk would be provided on both sides of the street.

A gate and service road located at the eastern boundary of the project site would provide access to flood control basin. Maintenance crews would access the gate and service road from the project's western entry and private internal street.

3.3.2.2 15th Street Improvements

The proposed project would include off-site improvements within the existing and currently unimproved portions of 15th Street. Located immediately adjacent to the project site, these improvements would include 40 linear feet of paved vehicular travel area with a 5-foot-wide sidewalk and an 8-foot-wide landscaped parkway on the north side of the street (see **Figure 3.4**).

[1] As designed. Up to five bedrooms if lofts in selected plans are converted into bedrooms.

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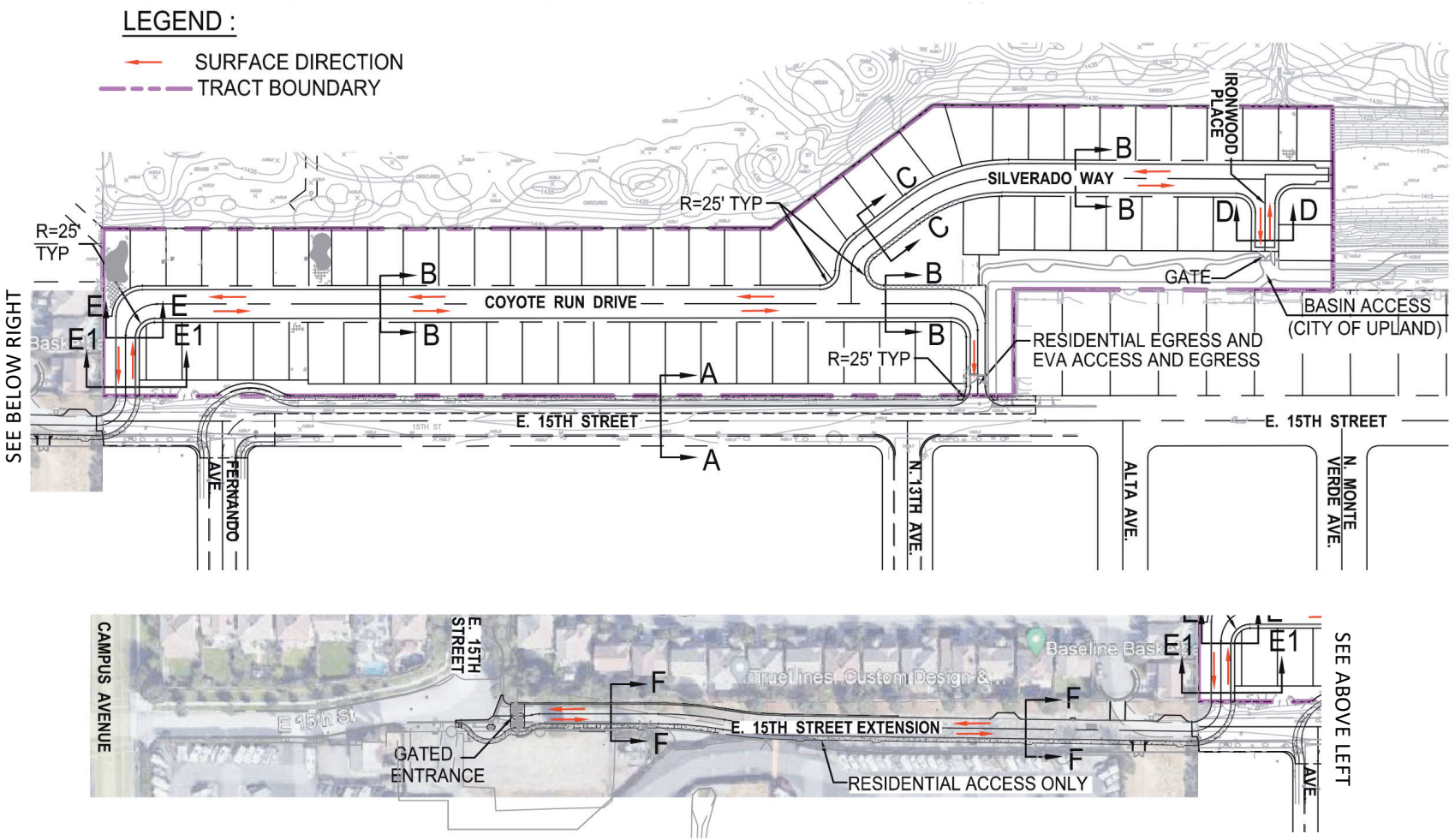

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FIGURE 3.3

NO SCALE

SOURCE: Villa Serena Specific Plan, July 2023

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Villa Serena Specific Plan

Vehicular Access

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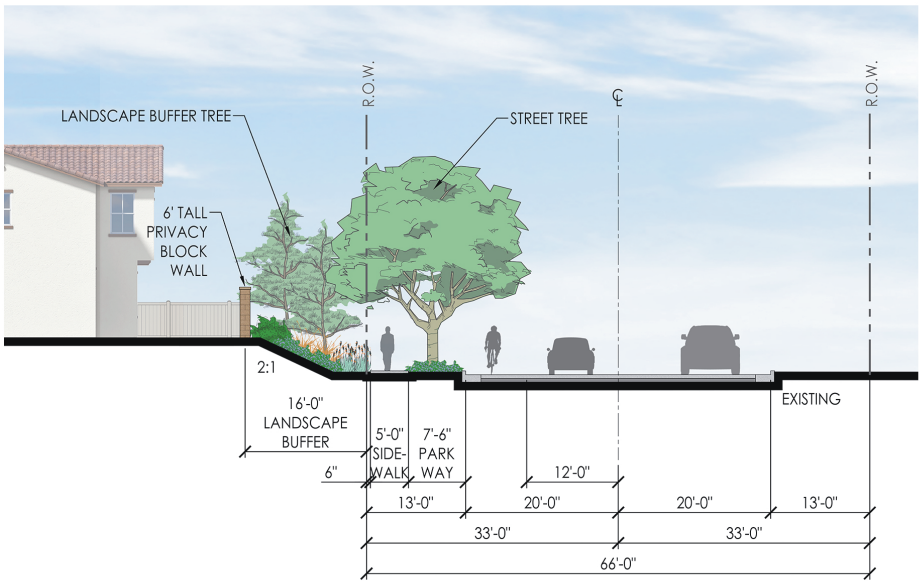

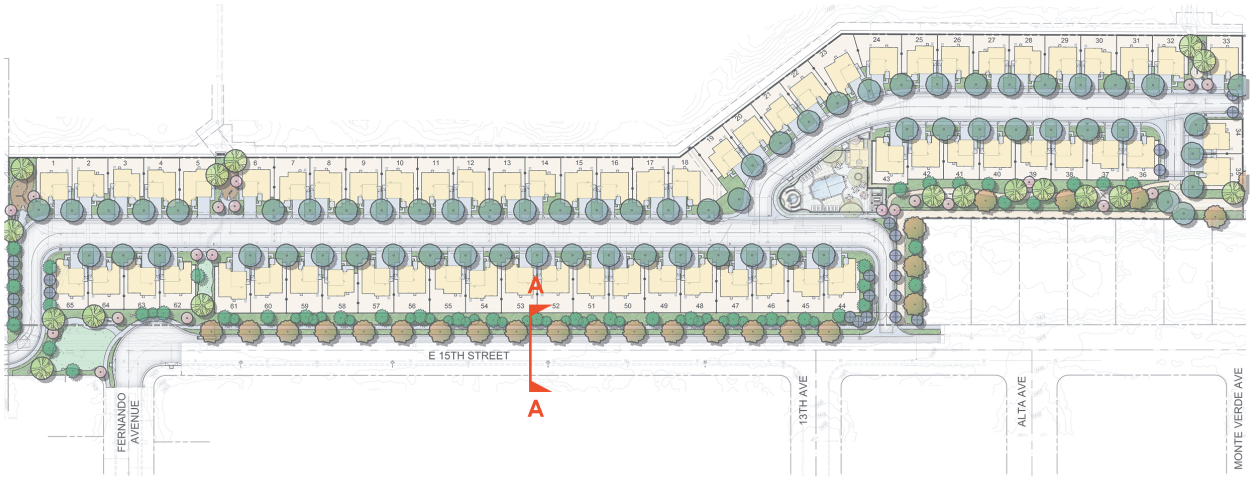

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FIGURE 3.4

NO SCALE

SOURCE: Villa Serena Specific Plan, July 2023

Villa Serena Specific Plan

15th Street Improvements - Cross Section

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The proposed project would include an extension of 15th Street from the southwest corner of the project site to the current terminus of East 15th Street to Campus Avenue. This extension will allow primary project access from Campus Avenue. This gated access would provide residential access to the proposed development. This roadway extension envisions 26 feet of pavement allowing for two lanes of travel and a 5-foot-wide sidewalk and wedge curb on the south side of the new roadway. A retaining wall and curb would be installed on the north side of the roadway extension (see **Figure 3.5**).

3.3.2.3 Pedestrian and Bicycle Circulation

The proposed project would include sidewalks for pedestrians and an internal street system that would provide bicycle access throughout the site. Connectivity would also be provided to the adjacent remaining portion of the Upland Basin and nearby pocket parks, amenity areas, and pedestrian and bicycle routes extending beyond the project site boundary via a planned on-site private pedestrian trail that would extend from the project site and 15th Street to existing off-site public trails within the flood control basin (see **Figure 3.6**). A public pedestrian/bicycle trail will extend from 15th Street to the existing public trails within the flood control basin. Sidewalks will be installed along the north side of 15th Street connecting to the existing sidewalks east of the proposed residential uses.

3.3.3 Parks, Recreation, and Open Space

The proposed project would include 1.02 acres of private common open space. A 0.23-acre recreational area is planned with a community pool, pool house with restrooms, picnic tables, a children's play area, and barbecues and picnic areas. Five additional pocket parks totaling 0.79 acre would be located throughout the project site and would include landscaping, children's play equipment, exercise equipment, and benches. One of the pocket parks would include a private trail that would provide pedestrian and bicycle connectivity for residents to the open space area east of the project site.

One 0.15-acre public pocket park is proposed at East 15th Street and Fernando Avenue. This park would provide open play areas and bench seating.

The project's proposed recreation and park features are detailed in **Figure 3.7.**

3.3.4 Infrastructure Improvements

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

- **Water:** The project site receives water service from the City of Upland Public Works Department. Water service to the site is provided via an existing, 10-inch-diameter water main that is within 15th Street. The proposed project would include construction of a network of 8-inch-diameter, on-site water mains that would be sufficient to provide for Upland's domestic and fire protection water requirements.

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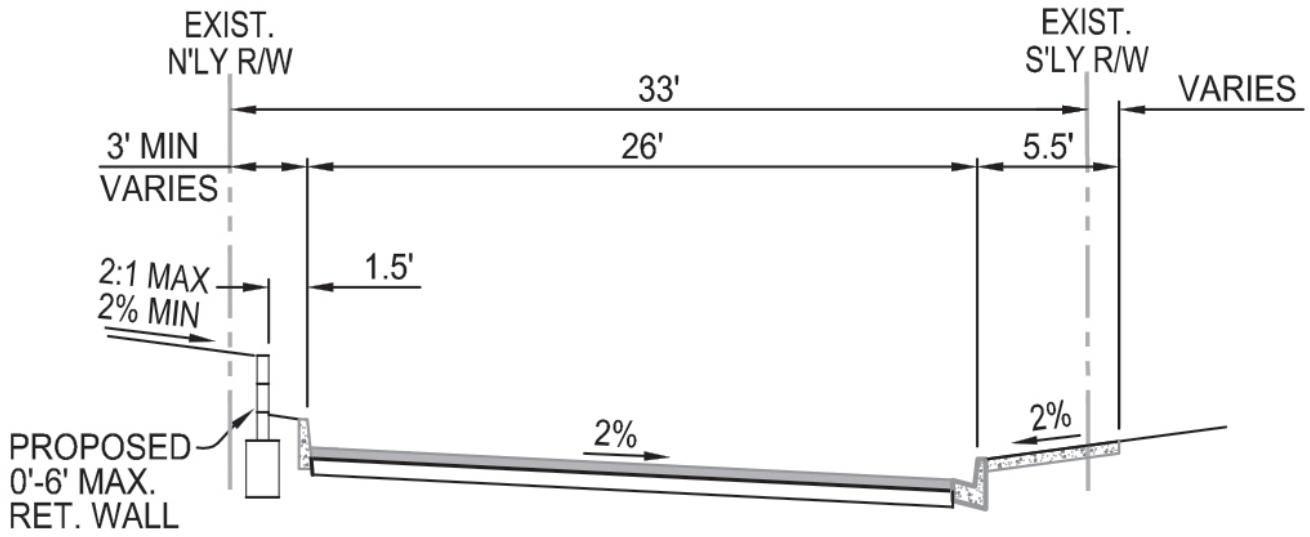

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FIGURE 3.5

Villa Serena Specific Plan

15th Street Extension - Cross Section

SOURCE: Villa Serena Specific Plan, July 2023

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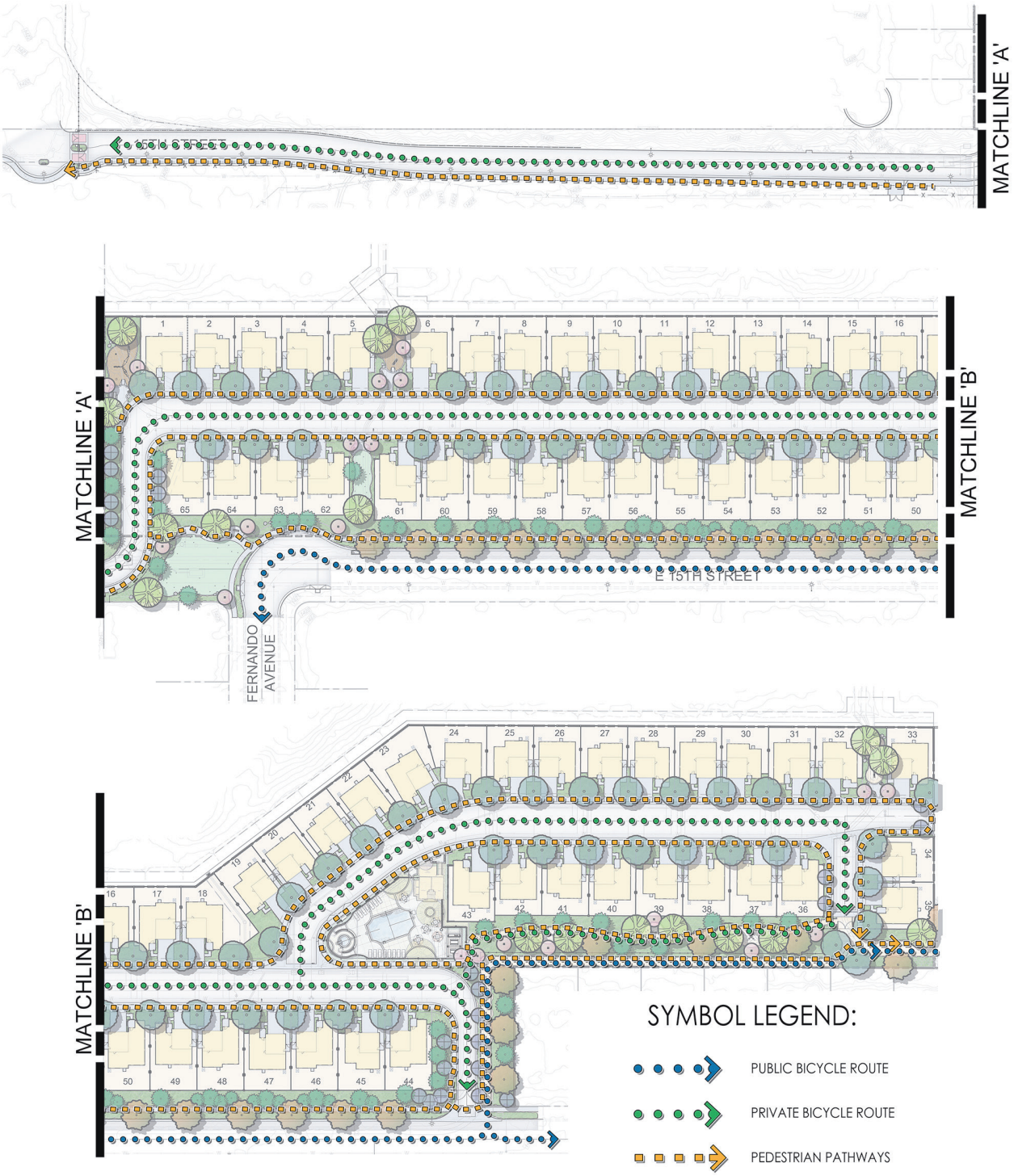

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FIGURE 3.6

NO SCALE

SOURCE: Villa Serena Specific Plan, July 2023

Villa Serena Specific Plan

Pedestrian and Bicycle Mobility

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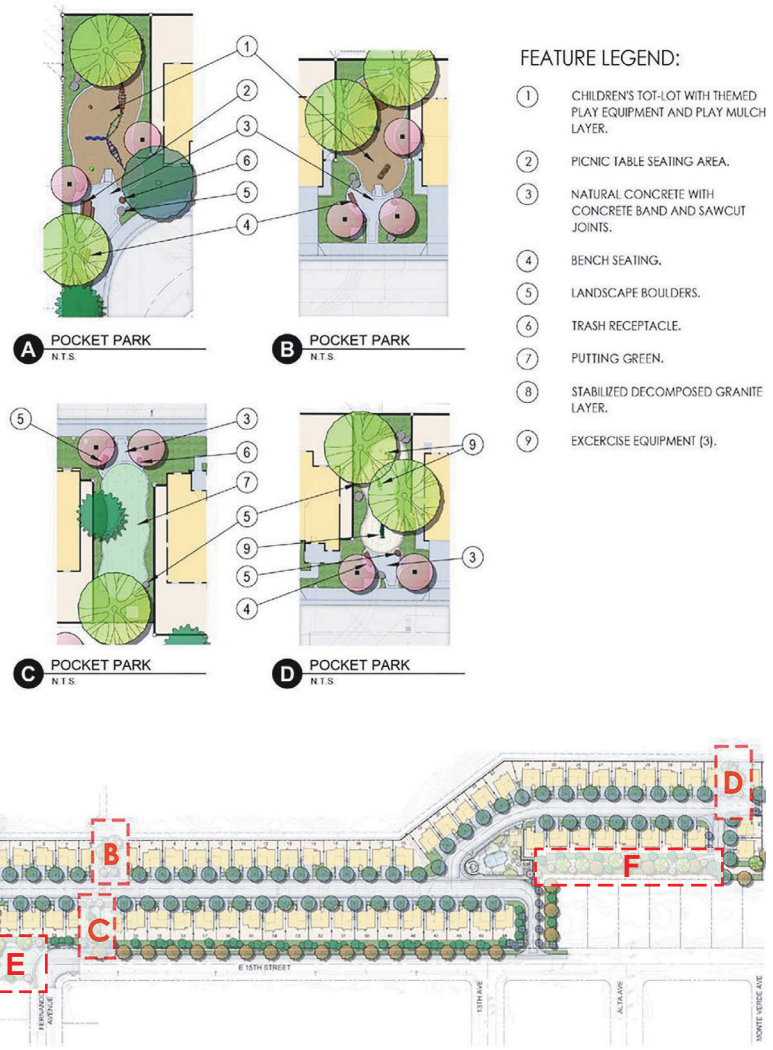

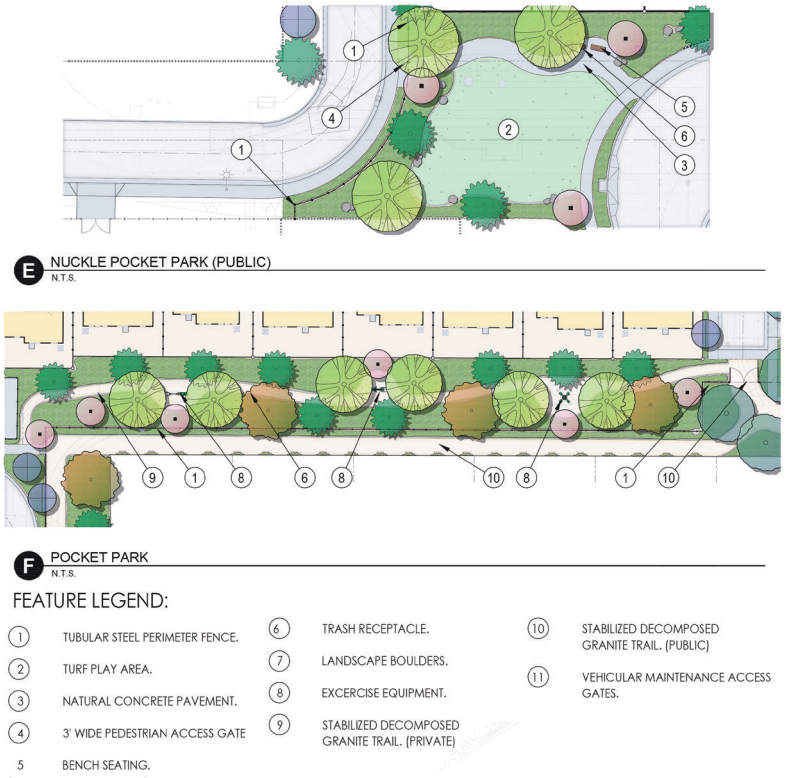

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FIGURE 3.7

NO SCALE

SOURCE: Villa Serena Specific Plan, July 2023

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Villa Serena Specific Plan

Recreation Features

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- **Sewer Service:** Existing off-site sewer facilities available to serve the project site include an existing 8-inch-diameter sewer main that within 15th Street. The proposed project would include the construction of an on-site network of new 8-inch-diameter sewer mains and the relocation of one existing, 8-inch-diameter off-site sewer main, all of which would connect to the on-site system.

- **Utilities:** The project site would receive electricity service from SCE and telephone service from Verizon. Natural gas from Southern California Gas Co. would be provided to the homes on site.

- **Drainage:** The project site generally drains from east to west as part of a local detention basin that consists of an essentially flat bottom with 3:1 side slopes. The proposed drainage would convey flows from the residential lots and streets into an on-site storm drain collection system, which would include street flow. Runoff would then be passed through an underground infiltration basin and outlet into a new 12-foot by 8-foot reinforced concrete box culvert that would outlet into a detention basin.

- **Flood Control Basin Modifications:** The proposed project includes modifications (e.g., relocation of existing basin infrastructure) to the existing flood control basin to accommodate the proposed residential development and maintain a fully operational flood control and retention facility on the portions of the basin directly east of the project site (see **Figure 3.8**). The 9.16-acre area proposed for residential development would be graded to fill this portion of the existing basin. Modifications to the flood control basin would include:

    - Extension of the flood control basin inlet, which is in the northwest corner of the existing basin, to the new eastern edge of the project site. New storm drain improvements would consist of a combination of 12-foot by 8-foot and 10-foot by 9.5-foot reinforced concrete box culverts. The improvements would extend approximately 1,900 linear feet from west to east along the southern edge of the site and outlet through a new headwall in the modified basin. The modified inlet would also pick up two existing smaller inlets tributary to the flood control basin within the site as follows:

        - An existing local inlet pipe approximately 300 feet east of the project site's eastern boundary is anticipated to be a 36-inch-diameter reinforced concrete pipe (RCP) that would be routed through the site to the new inlet.

        - An existing concrete trapezoidal channel approximately 60 feet west of the eastern edge of the project site would be picked up in an approximately 48-inch-diameter pipe and routed through the site into the new inlet round catch basin.

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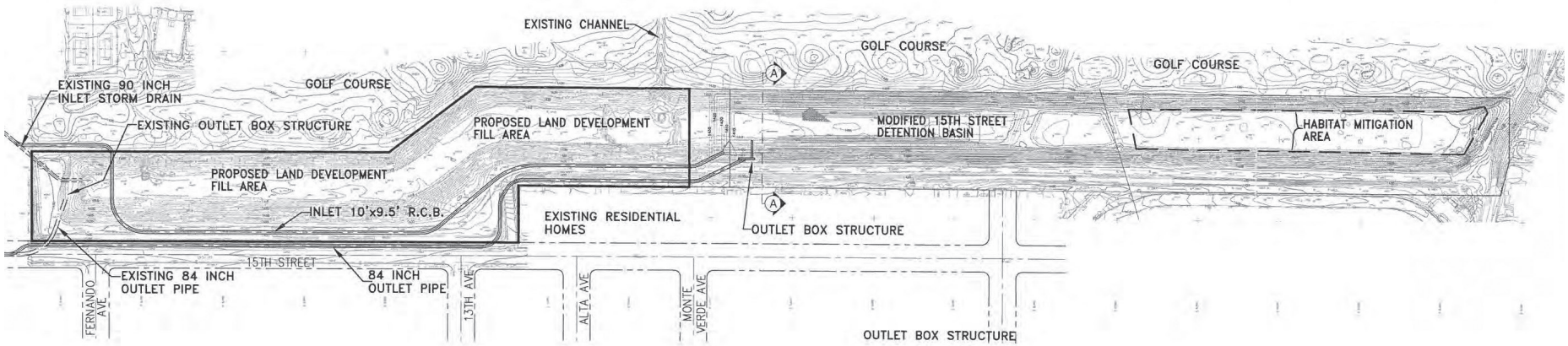

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FIGURE 3.8

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FEET

SOURCE: Villa Serena Specific Plan, July 2023

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Villa Serena Specific Plan

Conceptual Basin Modification

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- The project would include extension[2] of approximately 1,800 linear feet of the basin outlet from the western edge of the project site to the eastern edge of the project site. This extension is proposed to be an 84-inch-diameter RCP to account for the design outlet, as well as the spillway flows, and includes a new outlet structure in the flood control basin. The proposed pipe would extend from the southeast corner of the project site west to the main project entry, then south into 15th Street and west along 15th Street and connecting to the existing outlet pipe. Easements would be granted to the City for all basin infrastructure proposed to be located within the project site.

- To satisfy County of San Bernardino Flood Control District (County) criteria and City Public Works Department comments, the proposed project would include an emergency spillway alternative.[3] The existing flood control basin would be retrofitted to accommodate a trapezoidal emergency spillway with a crest at an elevation of 1,426.6 feet above mean sea level (amsl). The emergency spillway, with a base of 16 feet and a top width of 48.4 feet, would be installed at the end of Grove Avenue. A box weir outlet system would be designed to pass through a 200- or 500-year storm, with the emergency spillway providing discharge capacity for larger events.

The ”conservation area” on the easternmost 4.29 acres of the existing basin would remain unaffected by project activities. As detailed on the precise grading plan prepared for the project, no work, access, or storage is allowed within this area.

3.3.5 Project Construction

The proposed project would be constructed in five phases, consisting of site preparation, grading, building construction, paving, and architectural coating. Grading within the site would attempt to balance cut/fills for the site (16,765 cubic yards [cy] of cut and 80,926 cy of fill). The exact timing of implementation and phasing may vary based on physical constraints or timing of infrastructure improvements.

A portion of the basin directly east of the proposed residential uses would be modified to provide appropriate flood control capacity. A new berm would be created between the flood control basin and the project site. From the top of the berm, a new slope would be graded to the bottom of the modified basin. The proposed floor of the modified basin is planned at an approximate elevation of 1,410 feet amsl. Modifications to the bottom of the remaining basin would be made from the toe of the new slope to a point approximately 900 linear feet to the east by grading the bottom of the basin in this area to an elevation of approximately 1,410 feet amsl from an existing elevation of 1,414 to 1,415 feet amsl. The excess cut material generated would be utilized as fill for the proposed new berm to be located at the western edge of the new basin as well as for fill within the project site. The remainder of the existing flood control basin would not be modified. Total earthwork for

[2] To potentially reduce the sizes of new pipes, the project sponsor conducted an analysis of a basin bypass design that would divert flows (either low- or high-level flows) directly to the existing outlet pipe system. The bypass design did not satisfy the requirements associated with the existing system; therefore, this design was not carried forward.

[3] A box weir system with a 144-inch-diameter outlet pipe was also determined capable of handling the design discharge. While this system would not require the new open channel emergency spillway in the flood control basin, it could not be accommodated at this location.

the proposed project is estimated to be approximately 46,000 cy of cut and 87,000 cy of fill, resulting in an import of approximately 41,000 cy.

3.4 PROJECT OBJECTIVES

As provided by the project sponsor, the objectives of the proposed project are:

- Create a distinctive community design with a well-designed entry, streetscapes, walls, and entry monument
- Provide for architectural diversity within the community with varying residential floor plans and architectural styles
- Provide for on-site recreational opportunities for residents through provision of common area open space within the community offering active and passive recreational amenities for all age groups
- Design a development plan which ensures the community is adequately served by public facilities, infrastructure, and utilities without the need for extensions or improvements to existing public facilities
- Incorporate green and sustainable design features into the development plan

3.5 REQUIRED PERMITS AND APPROVALS

3.5.1 Discretionary Actions

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

- **EIR Certification:** This Administrative Draft EIR is being prepared as a California Environmental Quality Act (CEQA) compliance document for the entitlement (approval) of the Specific Plan as well as associated approvals discussed below. The EIR discusses consistency between this Specific Plan and the City's General Plan and provides mitigation measures to avoid or reduce the environmental effects resulting from implementation of the Specific Plan.
- **General Plan Amendment (GPA-23-0002):** The general plan amendment would revise the General Plan land use map to include the Villa Serena Specific Plan land use designation and remove the PU-FC land use designation.
- **Zone Change (ZC-23-0002):** A change of zone is required to revise the City's zoning map to include the Villa Serena Specific Plan (Specific Plan No. 18-02) Zone. The change of zone is required to change the PB-FC zoning designation to Specific Plan No. 18-02.

- **Specific Plan (SP-23-0002):** The approval of the Specific Plan would create the Villa Serena Specific Plan. Project-related improvements and proposed land uses are discussed in this chapter of the EIR.

- **Tentative Tract Map (TT-23-0001):** The Tentative Tract Map includes a subdivision to establish the boundaries and dimension of streets and the proposed grading. Following map recordation, the final map would become the legal document that identifies the lots and backbone infrastructure to allow for future subdivision maps to be filed.

- **Development Plan Review (DPR-23-0002):** The purpose of development plan review is to provide a process for the review of specific development activities on the project site, including review and approval of the site plan, architectural design, lighting and landscaping, etc. The review ensures the project will be built in accordance the Specific Plan policies and development standards, related to the identified community character, and expectations for high quality development.

3.5.2 Other City Actions

Various subsequent permits and approvals would be required to implement the proposed project. Subsequent permit approvals would be discretionary and subject to Planning Commission review and approval, and others would be administrative and subject to review and approval by City Directors, including the Directors of Development Services, Community Services, and/or Public Works. The Planning Commission shall have final approval, conditional approval, or denial of CUPs, tentative tract maps, plot plans, and public use permits. The Planning Commission shall be responsible for recommending approval, conditional approval, or denial to the City Council regarding any General Plan Amendments and zoning ordinance or zone changes. Further, the Planning Commission shall act on appeals from decisions by the Development Services Director.

Modifications to the proposed Specific Plan may be necessary to accommodate future development projects. Changes to the adopted Specific Plan shall be classified by the Community Development Director as either a Substantial Conformance Determination or Specific Plan Amendment.

3.5.3 Other Ministerial City Actions

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

3.5.4 Probable Future Actions by Responsible Agencies

Because the project also involves approvals, permits, or authorization from other agencies, these agencies are “Responsible Agencies” under CEQA. Section 15381 of the *State CEQA Guidelines* defines Responsible Agencies as public agencies other than the Lead Agency that will have discretionary approval power over the project or some component of the project, including mitigation. These agencies include, but are not limited to, the agencies identified in **Table 3.A**.

Table 3.A: Probable Future Actions by Responsible Agencies

Responsible Agency	Action
State Water Resources Control Board (SWRCB)	Applicant/Developer must submit Permit Registration Documents, including a Notice of Intent, to comply with the National Pollutant Discharge Elimination System (NPDES) Permit No. CAS618036 (Order No. R8-2010-0036).
California Department of Fish and Wildlife (CDFW)	Jurisdictional Delineation, Streambed alteration agreement.
Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification and Issuance of Waste Discharge Requirements (WDRs).
Southern California Edison (SCE)	Permits to Underground Utilities

Source: Compiled by LSA (2023).

4.0 SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental impact that has been identified for the proposed Villa Serena Specific Plan Project (project). The following pages in this chapter: (a) identify how a determination of significance is made and the environmental issues that are addressed, (b) describe the context for the evaluation of cumulative effects, (c) list the format of the topical issue sections, and (d) provide an evaluation of each potentially significant impact in Sections 4.1 through 4.8.

DETERMINATION OF SIGNIFICANCE

The California Environmental Quality Act (CEQA) defines a significant effect as a substantial, or potentially substantial, adverse change in the environment.[1] The "environment" means the physical conditions which exist in the area, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Each impact evaluation in this chapter is prefaced by significance criteria, which are the thresholds for determining whether an impact is significant. These significance criteria are based on the *State CEQA Guidelines* and applicable City of Upland (City) policies. In determining whether a project's impacts are significant, an Environmental Impact Report (EIR) ordinarily compares the environmental conditions with the proposed project with existing environmental conditions, which are referred to as the "baseline" for the impact analysis. This EIR compares the potential environmental impacts of the proposed project with the baseline environmental conditions in existence at the time that the Notice of Preparation was published on February 7, 2022.

ISSUES ADDRESSED IN THE DRAFT EIR

Sections 4.1 through 4.8 of this chapter describe the environmental setting of the project as evaluated in the EIR and the impacts that are expected to result from implementation of the proposed project. Mitigation measures are proposed to reduce potential impacts, where appropriate. The following environmental issues are addressed in this chapter:

- 4.1 Aesthetics
- 4.2 Air Quality
- 4.3 Biological Resources
- 4.4 Greenhouse Gas Emissions
- 4.5 Hydrology and Water Quality
- 4.6 Noise
- 4.7 Transportation
- 4.8 Tribal Cultural Resources

Preliminary analysis provided in the Initial Study (Appendix A-5) determined that development of the proposed project would not result in significant impacts to the following environmental topics: agriculture and forestry resources, cultural resources, energy, geology and soils, hazards and hazardous materials, land use and planning, mineral resources, population and housing, recreation,

[1] Public Resources Code Section 21068.

tribal cultural resources, utilities and service systems, and wildfire. Consequently, these issues with the exception of tribal cultural resources, are not examined in this chapter of the EIR and are instead briefly addressed in Chapter 5.0, Other CEQA Considerations. Subsequent to the completion of the Initial Study, the City initiated consultation with tribal representatives pursuant to Assembly Bill 52 and Senate Bill 18. Section 4.8 of this chapter includes discussion of the consultation efforts.

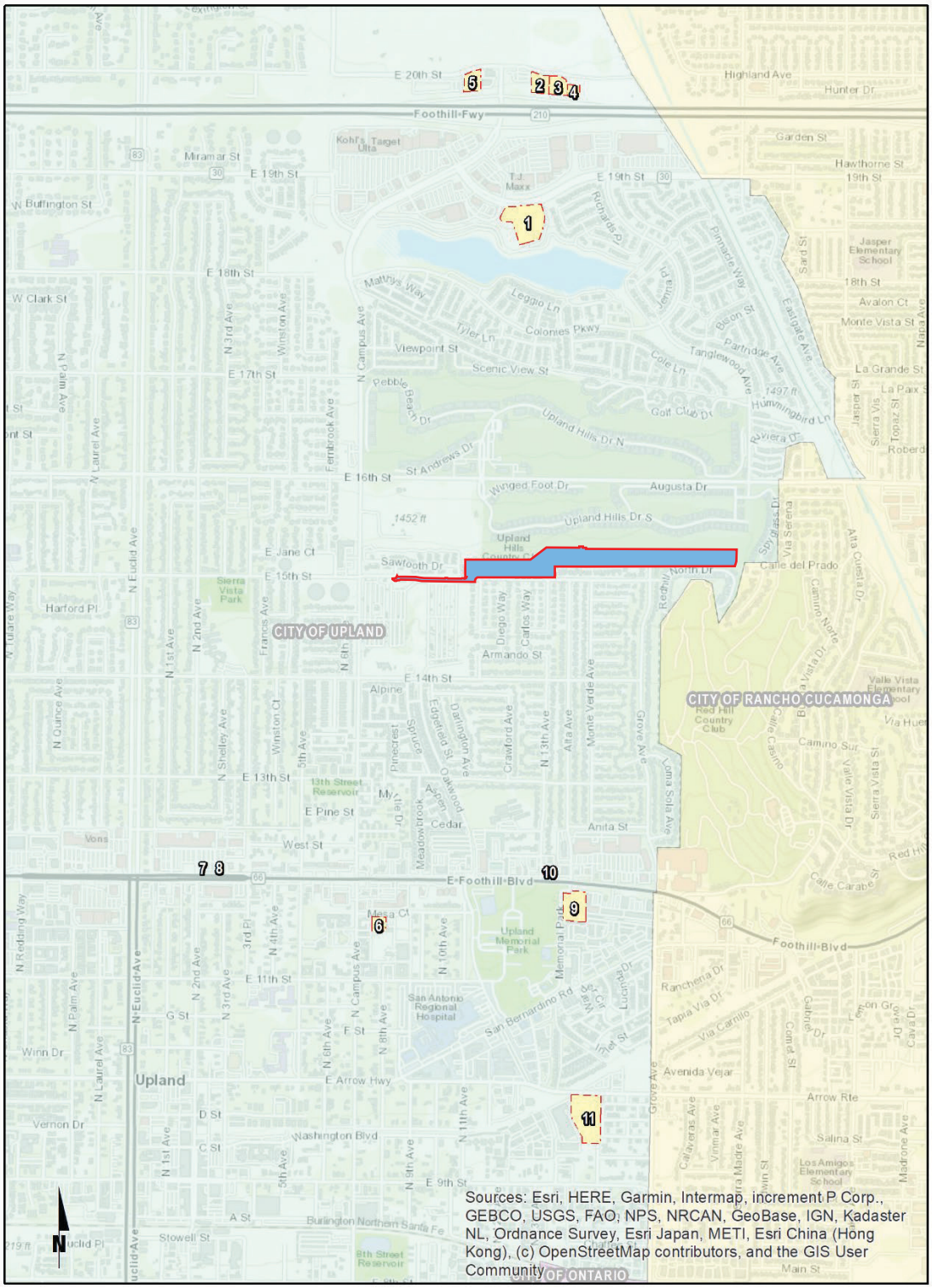
CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound to increase other environmental impacts." Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. CEQA requires that cumulative impacts be discussed using either a list of past, present, and probable future projects producing related or cumulative impacts, or a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describes or evaluates conditions contributing to the cumulative effect. This project-specific analysis employs both the list-based and projection-based approaches, depending on which approach best suits the resource topic being analyzed.

The cumulative land use assumptions include projections from the currently adopted Southern California Association of Governments 2020 Regional Transportation Plan/Sustainable Communities Strategy with refinements to reflect development projects that are under construction, approved, and pending in Upland.

The cumulative context for land use development project effects is typically localized within the immediate vicinity of the project site or at the neighborhood level. Cumulative development in the project vicinity includes the projects listed in **Table 4.A**. and detailed in **Figure 4.1.** These projects are either projects for which the City has a project application on file or projects that have been entitled but were not yet operational at the time that the EIR analysis began (i.e., February 2022). Refer to the appropriate discussion in each topical section for further discussion of the cumulative assumptions relevant to each issue topic.



LSA

LEGEND

- Project Site

FIGURE 4.1

NO SCALE

SOURCE: Villa Serena Specific Plan, July 2023

Villa Serena Specific Plan

Cumulative Projects

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Table 4.A: Cumulative Projects

Project/Location	Project Description	Project Status
Colony Condos	Construction of a 60-unit multifamily mid-rise building	Approved
Colonies Campus Center	Construction of a 4,565 sf gas station and 8,825 sf commercial building	Operational
Planet Car Wash	Construction of a 2,972 sf car wash	Operational
Colonies Self Storage	Construction of a 164,570 sf self-storage building	Under construction
Mesa Court Apartments	Construction of a 60-unit apartment complex	Approved
Starbucks (Upland Village Center)	Construction of an 2,049 sf coffee shop	Approved
Amazon Fresh at Upland Village Center	Construction of an approximately 35,000 sf grocery store	Constructed but not open
Foothill Self Storage	Construction of approximately 5,900 sf of self-storage and retail space	Approved
Rally's Hamburgers	Construction of an approximately 1,300 sf fast food restaurant	Operational
Rose Glen Specific Plan	Construction of 64 single-family detached residential units	Under construction

Source: Compiled by LSA (2023).
sf = square feet

FORMAT OF ISSUE SECTIONS

The environmental topical section is composed of two primary parts: (1) Setting, and (2) Impacts and Mitigation Measures. The following provides an overview of the general organization and the information provided in the two parts:

- **Setting:** The Setting subsection for an environmental topic generally provides a description of the applicable physical setting (e.g., existing land uses, existing traffic conditions) for the project site and its surroundings in Upland. It also provides an overview of regulatory considerations that are applicable to each specific environmental topic.

- **Impacts and Mitigation Measures:** The Impacts and Mitigation Measures subsection for an environmental topic presents a discussion of the potential impacts that could result from implementation of the proposed project. This subsection begins with the significance criteria, which are the thresholds used to determine whether an impact is potentially significant. The latter part of this subsection presents the potential impacts from the proposed project and mitigation measures, if necessary. The potential impacts of the proposed project are organized into separate categories based on the criteria listed in each topical section. Cumulative impacts are also addressed.

  Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively and begin with an acronym or abbreviated reference to the impact section (e.g., TRA-1). The following symbol is used for individual topics:

  - AES for Aesthetics
  - AIR for Air Quality

- BIO for Biological Resources
- GHG for Greenhouse Gas Emissions
- HYD for Hydrology and Water Quality
- NOI for Noise
- TCR for Tribal Cultural Resources
- TRA for Transportation

4.1 AESTHETICS

This section assesses the effects of the proposed project on visual resources within and in the vicinity of the project site. The proposed project's consistency with the Upland General Plan (General Plan) policies relevant to aesthetics, as well as compliance with relevant requirements and standards set forth in the Upland Zoning Code are also discussed. This analysis also considers the visual quality of the project site and its surroundings in addition to public views of the project site. Mitigation measures to reduce or avoid potentially significant impacts are identified where appropriate.

4.1.1 Setting

This section describes the existing visual character of the project site, the areas immediately surrounding the project site, and the area in the general vicinity of the project site.

4.1.1.1 Local Context

The project site encompasses the existing 15th Street Flood Control Basin and the extension of 15th Street to Campus Avenue. Within the flood control basin, 9.16 acres would be developed with 65 single-family residential uses. Directly east of this residential development, basin modifications would take place on 6.85 acres. The easternmost 4.29 acres of the basin would be retained in its current condition[1]. The 15th Street Flood Control Basin, which is near the eastern boundary of the city of Upland, between State Route (SR-) 210 to the north and Foothill Boulevard to the south. The project site is generally surrounded by single-family residential buildings that are one- to two-stories in height as well as recreational uses including a fairway of the Upland Hills Country Club golf course. Circulation in the surrounded area is provided by one- to two-lane roadways. The roadways serving the project vicinity generally provide on-street parking, including both parallel on-street parking and guest parking spaces within residential subdivisions. The nearest access points to and from SR-210 are the on- and off-ramps located along North Campus Avenue, approximately 2 miles north of the project site. Local roadways surrounding and providing public views of the project site include East 15th Street, Fernando Avenue, Diego Way, Carlos Way, North 13th Avenue, and Alta Avenue.

4.1.1.2 Existing Visual Character of the Project Site

"Visual character" is an impartial description of the defining physical features, landscape patterns, and distinctive physical qualities within a landscape. Visual character is informed by the composition of land, vegetation, water, and structures and their relationship to one another and their relative predominance, and by prominent elements of form, line, color, and texture that combine to define the composition of views. Visual character - defining resources and features within a landscape – may derive from notable landforms, vegetation, land uses, building design and façade treatments, transportation facilities, overhead utility structures and lighting, historic structures or districts, or panoramic open space.

The basin is on the northeast corner of the intersection of Fernando Avenue and East 15th Street. The basin, which is relatively flat, contains a raised earthen berm with vegetation, a basin to convey

[1] This 4.29-acre portion of the basin is referred to "conservation area' or "mitigation area" in Section 4.3 (Biological Resources).

storm water flows, and earthen utility roads. Vegetation on the site consists of riparian and wetland vegetation such as cattail marshes, upland vegetation such as California buckwheat scrub, and other land cover types.

4.1.1.3 Visual Character of the Surrounding Area

The city is at the foot of the San Gabriel Mountains to the north and may be characterized as suburban in nature, within inland Southern California (the Inland Empire), east of the Los Angeles metropolitan area. The city terrain is flat but slopes gradually upward to the north. The highest peak in the San Gabriel Mountains, Mount San Antonio (locally known as Mount Baldy), reaches a height of 10,064 feet approximately 9.5 miles north of Upland. The project area is characterized by relatively dense residential interspersed with nearby recreational and open space uses.

There are no officially designated or eligible State scenic highways within or adjacent to the project site. However, the City's Scenic Highways Element identifies Euclid Avenue (0.8 mile west of the project site) and Foothill Boulevard (0.76 mile south of site) as routes of scenic and historic interest that warrant consideration as a scenic highway. The visual character of the surrounding area is further described below.

- **North of the Project Site:** The project site is bordered to the north by a fairway associated with the Upland Hills Country Club. Mature trees and other vegetation provide screening between the project site and the golf course. Beyond the fairway are recreational uses associated with the club and one- and two-story single-family residential homes situated along Upland Hills Drive that were constructed in the early 1980s., Single-story commercial uses and additional one- and two-story single-family residential uses are farther north of East 16th Street.

- **East of the Project Site:** The project site is bordered to the east one- to two-story single-family residential uses, the Red Hill Country Club golf course, and Cucamonga Creek. Cucamonga Creek is a channelized drainage, consisting of a fenced concrete-lined channel. A paved multi-use trail is also located along the western edge Cucamonga Creek. One- to two-story single-family residential and commercial uses are located east of the channel. .

- **South of the Project Site:** The project site is bordered to the south by the east-west segment of East 15th Street. Land uses south of 15th Street generally consist of one- to two-story single-family neighborhoods. Farther south of the project site are additional single family residential uses, with institutional uses such as the Champions at Foothill Knolls STEAM Academy of Innovation, and commercial uses closer to East Foothill Boulevard. Nearly every building between the project site and East Foothill Boulevard is either one or two stories in height.

- **West of the Project Site:** The project site is bordered to the west by two-story residential uses along Sawtooth Drive as well as the SCE Padua Substation, which includes electrical generation and distribution equipment that stand approximately 30 to 40 feet in height. The Drydock Depot, an RV and boat storage yard with one-story buildings, is also located west of the project site.

4.1.1.4 Views from the Project Site

Views from within the project site to surrounding areas are largely limited due to existing topography and obstructed due to existing off-site development and mature trees. Available views are generally limited to the immediate surroundings and surrounding hillsides.

- **Views to the North:** Views to the north are restricted by the existing berm on the project site, mature trees on the northern border of the project site, and single-family residential uses along Upland Hills Drive South. These buildings vary in design, but primarily consist of stucco, shingles, and glass windows. Surrounding hillsides, including Mt. Baldy, are visible to the north, but are largely obstructed by the existing trees.

- **Views to the East**: Views to the east from the project site generally consist of the remainder of the 15th Street Flood Control Basin, which consists of vegetation including shrubs, grasses, and mature trees along the northern boundary of the project site. Further views are restricted by these mature trees as well as existing single-family residences along East 15th Street. Distant views of hillsides are available to the east, however these are also largely obstructed by existing development and mature trees.

- **Views to the South**: Views to the south are restricted by single-family residential uses and mature trees to the south. These buildings vary in design but generally consist of stucco and wood siding. Long-range views of distant hillsides are partially available from the site as the roadways that travel in a north-south direction away from the site (such as North 13th Avenue or Alta Avenue) gently slope downwards as they move south. However, these views are largely obstructed by the existing development.

- **Views to the West**: Views to the west are restricted by single-family residential uses immediately adjacent to the project site. These buildings vary in design but primarily consist of stucco and wood siding. Long-range views are generally not available due to this development.

4.1.1.5 Views of the Project Site

Similar to views from the project site described above, views of the project site from areas that do not immediately border the site are generally limited due to the developed nature of areas immediately surrounding the project site, existing mature trees, and the topography.

- **Views from the North:** Views of the project site from the Upland Hills Country Club golf course looking south are of the current basin, scrub habitat and other vegetation. Surrounding one- and two-story single-family residential uses are visible as well, but are views are restricted by the mature trees along the northern border of the project site and the existing berm. Distant hillsides are also partially visible to the south. There are no public views (i.e., such as a public street or sidewalk) of the project site from the north.

- **Views from the East:** Views of the project site from the east are of the existing berm, fence, and vegetation on the site along the southern boundary of the site. No public views of the eastern boundary of the site are available due to intervening single-family residential uses and mature

vegetation. Views beyond the site to the east are also largely obstructed by existing vegetation and development.

- **Views from the South:** Views of the project site from the south available from East 15th Street, North 13th Avenue, Fernando Avenue, and Alta Avenue, include the existing berm, fence, and vegetation. The mature trees along the northern boundary of the project site are visible from these roadways. The existing residential uses north of the project site are also partially visible, but are obscured by the berm on the project site and the mature trees. In addition, North 13th Avenue, Fernando Avenue, and Alta Avenue gently slope downhill as they move away from the project site to the south, further reducing the visibility of the residential uses to the north. Background views of the San Gabriel Mountains, including Mt. Baldy, are also available from each of these roadways. However, these views north to the mountains are partially obscured by the mature trees and existing single-family residential uses. Views from North 13th Avenue, Fernando Avenue, and Alta Avenue are further obscured by vegetation and single-family residential uses on each of these streets.

- **Views from the West:** Views of the project site from the western terminus of East 15th Street, looking east towards the project site, are of the existing berm, fence, and vegetation. No other public views of the western border of the project site are available due to existing development, including single-family residential uses and the SCE Padua Substation. Views beyond the site of distant hillsides are generally available but are partially obstructed due to mature trees.

4.1.1.6 Light and Glare

There are two types of artificial, or man-made, light sources within the project area: (1) direct sources such as illuminated signage, street light poles, and vehicle headlights; and (2) indirect sources of reflected light such as reflective or light-colored surfaces. The effect produced by direct and indirect light sources that is perceived as excessive brightness is commonly referred to as “glare”.

Direct view of light sources, such as the surrounding homes and streetlights, and light from automobile headlights represent sources of nighttime glare adjacent to the project site. The flood basin when filled with water is anticipated to be a source of daytime glare from the sun’s reflection; however, current climate conditions and drought has kept the basin primarily dry except for infrequent storm events.

4.1.1.7 Regulatory Framework

The following discusses applicable standards and policies related to visual resources, including those from the California State Scenic Highway Program, the Upland General Plan, and Upland Municipal Code.

State Regulations. State regulations applicable to the proposed project include the California State Scenic Highway Program, as described below. ***California State Scenic Highway Program.*** California’s Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. State laws governing the Scenic Highway Program are found in the Streets and Highways

Code, Section 260 et seq. A highway may be designated as "scenic" based on the expanse of the natural landscape that can be seen by travelers, the scenic quality of that landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. A Scenic Corridor is described as the land generally adjacent to and visible from such a highway and is usually limited by topography and/or jurisdictional boundaries. In addition to State Highways, Marin County roads are also eligible for scenic designation. As noted above, no State-designated scenic highways are located within view of the project site. The cities of Upland, Ontario, and Chino requested that Euclid Avenue be added to the State Scenic highways eligibility list in 1975; however, the request was denied.

Local Regulations. The proposed project would be required to comply with local regulations, including the General Plan and the Municipal Code.

City of Upland General Plan. The following City of Upland General Plan goals and policies are relevant to the aesthetic impacts of the proposed project:

- **Goal LU-1:** A viable community with a mix of land uses and building types that offer a wide range of choices to live, work, shop and participate in civic, cultural, open space, and recreational opportunities.
    - **Policy LU-1.2: Permitted Densities and Intensities.** Ensure existing and future zoning designations correspond to the permitted density and intensity ranges as listed in Table LU-1 of the Land Use Element.
- **Goal LU-6:** A community that encourages complementary development and maintenance of existing development.
    - **Policy LU-6.1: Quality Development.** Ensure that development is attractive and promotes harmony in the visual relationships and transitions between newer and older buildings.
    - **Policy LU-6.2: Compatibility of Uses.** Control the location, concentration and operations of land uses that have potential impacts on surrounding development through effective design principles, adequate buffering, and enforcement of regulatory documents.
- **Goal CC-1:** A community with a small town character and distinct sense of place that embraces complementary growth.
    - **Policy CC-1.1: Small Town Scale.** Support the maintenance and expansion of Upland's existing character by requiring preservation of historic features, buildings, and landscaping while encouraging new development to complement the character, scale, and heritage of development in the community.
    - **Policy CC-1.3: Place Making.** Ensure that existing and proposed buildings, structures, infrastructure, landscaping, lighting, and signage contribute to the image of the City as a place of high quality and positive value.

- **Policy CC-1.4: Contextual Design Themes.** Encourage new development to incorporate similar design themes to those existing within the project area to ensure buildings, when seen together, create recognizable districts and corridors.

- **Policy CC-1.6: View Protection.** Direct private development to enhance public view corridors of the San Gabriel Mountains, where feasible. These views are an integral part of the City's geographic space and provide a unique sense of place for Upland as a foothill community.

- **Goal CC-3:** Districts that achieve cohesive design to reinforce a unique and vibrant sense of place in the community.

  - **Policy CC-3.5: Cohesive Design.** Encourage individual development projects to be designed as part of a larger district, in which they enhance multi-modal and visual connectivity and compatibility with the surrounding area.

- **Goal CC-5:** Sites and buildings of a high standard of design quality, visual interest, livability and sustainability.

  - **Policy CC-5.1 Site Design Principles.** Require new development projects to adhere to the basic principles of high-quality site design as set forth below, elsewhere in the General Plan, zoning and development standards, and any additional design guidelines adopted by the City. Basic principles include:

    a. *Buffers.* Encourage buffers between uses that are incompatible in design and/or operations, including, but not limited to, areas in the southwest and southeast portions of the City where industrial and residential land uses intermix.

    b. *Edges.* Ensure that buildings, trees or other architectural features provide edges and definition to the street to enhance the vitality and improve the feeling of safety and security in urbanized areas, especially in areas with high pedestrian traffic.

    c. *Building Siting.* Encourage new developments to bring buildings closer to the street as appropriate to create a more intimate and comfortable pedestrian environment.

    d. *Varied Setbacks.* Encourage varying setbacks, according to the existing character or context of the neighborhood, to provide visual interest, opportunities for transitional landscaping, and varying shadow patterns.

    e. *Green Space.* Provide adequate green space by ensuring new development and redevelopment includes appropriate green spaces, such as parkways, community squares, parks, rooftop gardens, and plazas that complement the architecture of the development.

f. *Landscaping.* Promote high-quality landscape design and maintenance to soften buildings, parking lots, and hardscape with specific emphasis on a "California-friendly" plant palette.

g. *Pedestrian Elements.* Promote the use of elements such as special paving materials, landscaping, pedestrian-scaled lighting and seating along pedestrian paths and walkways to encourage pedestrian use.

h. *Walls and Fencing.* Walls and fencing should be limited to providing privacy in side and rear yards and providing screening of non-residential utility areas to preserve the sense of a safe and inviting community. Where they are allowed, walls and fencing should be built of high-quality materials that match and complement the architectural style of buildings on the property and provide visual relief through the use of a mixture of materials, landscaping, walkways and greenbelts. Additional landscape areas between sound walls, garden walls, and fencing and rights-of-way should be provided to mitigate the height and visual barrier of walls per the Zoning Code.

- **Policy CC-5.2: Building Design Principles.** Require new development projects to adhere to the basic principles of high-quality building design as set forth below, elsewhere in the General Plan, and in any additional design guidelines adopted by the City. Basic principles include:

  a. *High-Quality Development.* Require new buildings to be of high architectural design and construction quality, including a high degree of articulation for visual interest, and attention to detail in both design and construction within the context of a building's location.

  b. *Sustainable Development.* Require building owners and developers to integrate green initiatives into their buildings, such as recycled materials, California friendly landscaping, energy efficient devices and water conservation technologies.

  c. *Architectural Style for Non-Historic Areas.* Require new developments to adhere to the predominant architectural style of buildings in the vicinity, where one is apparent, while encouraging variation in design elements; where there is not a strong architectural style, new styles may be appropriate.

  d. *New Buildings Adjacent to Historic Buildings.* Require the design of new buildings adjacent to historic buildings to be compatible with the form and massing of the historic structure, including height, setback, massing, roof form, and architectural style.

  e. *Multi-Family and Mixed-Use Residential Compatibility.* Require multi-family housing and mixed-use development to be in scale with or transition in scale from adjoining or adjacent single-family areas through the use of similar setbacks, complementary

building arrangements and architecture, gradual changes to building heights, buffer yards and the avoidance of overwhelming building scale and visual obstructions.

f. *Single-Family Residential Compatibility.* Require that new single-family housing in established neighborhoods be designed to be compatible in scale with other homes in the immediate neighborhood.

g. *Single-Family Residential Additions.* Require that additions to existing single-family housing be developed in the same style.

h. *Building Articulation.* Ensure that the exterior on all sides of a building are varied and articulated to provide visual interest to its surroundings.

i. *Variety of Size and Scale.* Encourage new developments to contain a variety of lot and dwelling sizes and scales. Some lots may be designed to accommodate one-story houses, which generally require greater lot width to avoid front elevations of houses that are dominated by garages.

j. *Upper Story Setbacks.* Encourage multiple-story buildings to step the building back from the street edge at upper levels to allow sunlight into the street and create visual interest.

k. *Building Entrances.* Encourage building entrances to be oriented toward a public street, serve as primary pedestrian entrances to a business, and include architectural features that give them prominence.

l. *Garage Design.* Ensure garages for new single-family houses, duplexes, and townhouses are visually subordinate in importance to the house itself, especially the entry. This can be achieved by locating garages toward the back of properties, limiting the width of the garage to two car spaces, building garages as separate structures from the house, requiring garages to be set back from the front facade of the house, and encouraging the orientation of garage doors at 90 degrees to the street.

m. *Secondary Units.* Require secondary units to be visually subordinate to the primary residence and located behind single-family homes and above garages pursuant to the standards of the Zoning Code.

- **Goal OSC-1:** Upland's natural resources such as open space, wildlife and vegetation, are protected and enjoyed as limited and valuable resources and integral parts of a sustainable environment.
    - **Policy OSC-1.7: Dark Sky Protection.** Promote shielded, dark-sky friendly lighting for Upland's outdoor lighting needs in order to reduce light pollution and glare; increase energy efficiency; protect wildlife; and promote better health.

City of Upland Municipal Code. The intent and purpose of the Upland Zoning Ordinance, or Title 17 in the City's Municipal Code, are to promote and protect "the public health, safety, and welfare of the people of the city, and to provide for the social, physical, and economic advantages resulting from comprehensive and orderly planned use of land resources." Title 17 provisions also assist with the implementation of the City's General Plan and other specific plans.

Chapter 17.14: Outdoor Lighting. This chapter establishes minimum requirements for outdoor lighting in order to reduce light trespass and glare, and to protect the health, property, and the well-being of residents and visitors. New lighting would be required to comply with the standards, subject to review by the community development department. Further requirements include compliance with Title 24 Energy Efficiency Standards for outdoor lighting. If a conflict between the requirements of this chapter and the State of California Title 24 Energy Efficiency Standards arises, that which produces the least glare shall apply.

4.1.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to aesthetics that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.1.2.1 Significance Criteria

Appendix G, Initial Study Checklist, of the CEQA Guidelines includes checklist questions relating to aesthetics. The proposed project would potentially create a significant aesthetic impact if it would:

Threshold AES-1: Have a substantial adverse effect on a scenic vista;

Threshold AES-2: Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;

Threshold AES-3: Substantially degrade the existing visual character or quality of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, it would conflict with applicable zoning and other regulations governing scenic quality; or

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

As previously noted, the project site consists of the existing 15th Street Detention Basin and is generally surrounded by a developed urban environment, with views of distant hillsides available from some surrounding locations. The project site does not contain any unique visual features or

scenic resources; therefore, the following analysis focuses on the views of scenic resources available from the project site and the surrounding areas.

For the purposes of the following analysis, high-quality views have topographic relief, a variety of vegetation, rich colors, impressive scenery, and unique natural and/or built features. Moderate quality views have interesting but minor landforms, some variety in vegetation and color and/or moderate scenery. Low quality views have uninteresting features, little variety in vegetation and color, uninteresting scenery, and/or common elements. In addition, viewer types in the project area are broad, including motorists, pedestrians, and neighboring uses. Public viewer groups are limited to motorists and pedestrians along public roadways in the project vicinity, as well as users of nearby parks and public open spaces. In addition, for informational purposes, this evaluation includes a discussion of representative views from adjacent private residential properties as seen from public roadways in residential areas; private views are not considered protected scenic views pursuant to the California Environmental Quality Act (CEQA).[2]

Viewer exposure conditions were determined based on a review of a variety of data, including project maps and drawings, aerial and ground-level photographs of the project area, conceptual simulations of the proposed project, and field observations. Variables include the viewing distance, angle of view, the extent to which views are screened or open, and duration of view. Viewing distances are described according to whether the proposed project would be viewed within a foreground zone (within 0.5 mile), middleground zone (0.5 to 2 miles), or background zone (beyond 2 miles). Viewing angle and extent of visibility consider the relative location of the proposed project to the viewer and whether visibility conditions are open and panoramic, or limited by intervening vegetation, structures, or terrain.

The duration of the view pertains to the amount of time the project facilities or area would typically be seen from a sensitive viewpoint. In general, the duration of the view would be less for motorists on major travel routes and other locations where the project would be seen for short or intermittent periods. Duration becomes greater when the project may be seen regularly and repeatedly, with the viewer facing the project for an extended period of time.

4.1.2.2 Project Impacts

The following describes the potential impacts related to aesthetics that could result from implementation of the proposed project.

Threshold AES-1: Scenic Vistas. Scenic resources may consist of unique topographic, geologic, landscape, or built-environment features and include limited or expansive views of such resources. A scenic vista is generally defined as a publicly accessible vantage point that provides expansive or panoramic views. Cities may also recognize scenic corridors as being locally significant. Scenic corridors are considered a defined area of landscape, viewed as a single entity that includes the

[2] The California Court of Appeals concluded in its *Mira Mar Mobile Community v. Oceanside* decision that potential impacts related to views from private lands are not considered impacts under CEQA unless the lead agency has specifically adopted a standard or policy relevant to the project site specifically protecting a private landowner's views. The City of Upland, as the CEQA lead agency for the proposed project, has not adopted any such policy or standard.

total field of vision visible from a specific point, or a series of points along a linear transportation route. Public view corridors are areas in which short-range, medium-range, and long-range views are available from publicly accessible viewpoints (e.g., from city streets).

There are no officially designated scenic vistas within Upland; however, the General Plan identifies the San Gabriel Mountains (including Mt. Baldy) as visually significant, to the extent that these features are visible from public streets, parks, and public pathways. As discussed above in Section 4.1.1, Setting, surrounding hillsides and mountains (including Mt. Baldy) are visible in the background from the project area; however, views are intermittently or largely obstructed by existing development and mature trees and therefore are not considered to be expansive from any given public vantage point or of such high quality as to constitute a scenic vista.

As discussed in Chapter 3.0, Project Description, the proposed project would consist of the development of 65 single-family detached residential units with lots that would range in size from 3,337 to 5,048 square feet in height. The residential units would be up to 2,886 square feet in size and a maximum of 35 feet in height. The basin modifications would not result in the development of structures or features that neither change the general aesthetic profile or condition of the remaining basin or be visually intrusive to the general public[3]; therefore, the discussion below focuses on changes in the visual character resulting from the development of the residential uses and ancillary features. Changes to the viewshed resulting from implementation of the proposed project are discussed below:

- **Views from the North:** There are no publicly available views of the project site from the north, as existing single-family residential uses and mature vegetation within the private Upland Hill's Country Club obscure any view of the site from nearby roadways (such as East 16th Street). The new residential uses on the project site would be similar in height to the existing residential uses along Upland Hills Drive South and Winged Foot Drive, and therefore would not be visible to users (i.e., automobiles and pedestrians) of East 16th Street, Upland Hills Drive South, and Winged Foot Drive.[4] Therefore, implementation of the proposed project would not have a substantial effect on scenic resources as viewed from the north.

- **Views from the East:** Public views of the project site from the east are limited to the portion of East 15th Street that is located south of the residential development area, existing development and the remainder of the basin prevent public access to any other areas east of the residential

[3] Modifications to the bottom of the remaining basin would be made from the toe of the new slope to a point approximately 900 linear feet to the east by grading the bottom of the basin in this area to an elevation of approximately 1,410 feet above mean sea level (amsl) from an existing elevation of 1,414 to 1,415 feet amsl. The project includes the extension and/or relocation in outlet and inlet structures within the modified basin. The basin would additionally retrofitted to accommodate a trapezoidal emergency spillway with a crest at an elevation of 1,426.6 amsl. The emergency spillway, with a base of 16 feet and a top width of 48.4 feet, would be installed at the end of Grove Avenue. These features and structures are anticipated to be substantially similar to those currently within the basin and are not expected to be visually intrusive.

[4] Upland Hills Drive South and Winged Foot Drive are private roadways accessible only to residents and visitors of the Upland Hills Country Club.

development area. There are no scenic resources visible from East 15th Street, as any distant or background views are completely obscured by existing development and mature trees. The proposed residential uses would be similar in height to existing residential uses east of the project site, and therefore the resulting viewshed would be similar to existing conditions. Therefore, implementation of the proposed project would not have a substantial effect on scenic resources as viewed from the east at East 15th Street, a public roadway.

- **Views from the South:** Views of the project site from the south are available from East 15th Street, North 13th Avenue, Fernando Avenue, and Alta Avenue. The project site is not visible from other surrounding roadways such as Diego Way or Carlos Way due to existing development. As described above, the San Gabriel Mountains and Mt. Baldy would be the main scenic resource visible from viewpoints south of the project site. The proposed project would include new single-family residential uses on the currently undeveloped project site, and therefore would introduce new structures onto the site. However, the proposed residential uses would be below the height of the existing mature trees along the northern border of the project site. Therefore, while the proposed project would slightly obscure lower views of the San Gabriel Mountains and Mt. Baldy, the ridgeline and most prominent views (i.e., higher views that extend above the existing mature trees) would continue to be visible with implementation of the proposed project. In addition, as stated above, North 13th Avenue, Fernando Avenue, and Alta Avenue all gently slope downwards as these roadways move further south of the project site. Therefore, as users (i.e., automobiles and pedestrians) move further to the south, the topography of the roadways would begin to obscure views of the project site and the proposed residential development. Therefore, the resulting viewshed would be similar to existing conditions, and the San Gabriel Mountains and Mt. Baldy would continue to be visible from public vantage points with implementation of the proposed project. Therefore, implementation of the proposed project would not have a substantial effect on scenic resources as viewed from East 15th Street, North 13th Avenue, Fernando Avenue, or Alta Avenue, all of which are public roadways.

- **Views from the West:** Public views from the west are limited to the portion of East 15th Street that is located southwest of the project site, as existing development along Sawtooth Drive prevents public access to any other areas west of the project site. Background views of distant hillsides are visible to the east; however, these views are largely obscured by mature vegetation. From this vantage point, views are of the berm, fence, and vegetation. Surrounding mature trees are also visible. New residential uses would be similar in scale and height to existing uses and would not significantly further obscure views of the hillsides to the east, as they would still be available to users (i.e., automobiles and pedestrians) as they move west along East 15th Street. The resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible in the background with implementation of the proposed project. Therefore, implementation of the proposed project would not have a substantial effect on scenic resources as view from East 15th Street, a public roadway.

Overall, although the proposed project would introduce new development at the project site, the proposed development would not substantially or completely obstruct existing public views of

identified scenic resources. Therefore, the proposed project would not have a substantial adverse effect on views of scenic resources and vistas, and impacts would be **less than significant.**

Threshold AES-2: State Scenic Highways. As described in Section 4.1.1.3, Visual Character of the Surrounding Area, there are no State-designated Scenic Highways within, or in the vicinity of, the project site. The nearest eligible State Scenic Highways include Routes 57 and 142, both of which are more than 10 miles southwest of the project site. The nearest designated State Scenic Highway is Route 2 approximately 17 miles north of the project site. Due to distance, the project site is not visible from any of these highways. Therefore, implementation of the proposed project would not damage existing scenic resources within a State Scenic Highway, and **no impact** would occur.

Threshold AES-3: Visual Quality-Related Policies. The project site is located within an urbanized area. Development of the proposed project would alter the visual character of the project site through the construction of new single-family residential uses. At full buildout, the proposed project would include a total of 65 single-family residential uses as well as associated site improvements including common open space areas and new roadways and landscaping.

As discussed in Chapter 3.0, Project Description, the project site would be rezoned to Villa Serena Specific Plan (Specific Plan) as part of the proposed project. The Specific Plan establishes a procedure for development of the project site and includes the following development standards: (1) General Site Development Standards; (2) Green and Sustainable Development Standards; (3) Permitted Uses and Structures; (4) Residential Development Standards; (5) Temporary Uses; (6) Open Space Development Standards; (7) Landscaping, Fencing, and Walls; (8) Signage; and (9) Lighting. Each of the residential units on the project site would be required to comply with the development standards in the Specific Plan. A summary of each of these standards is provided below.

- **General Site Development Standards:** The General Site Development Standards set the maximum number of residential dwelling units on the project site at 65 and require 42,000 square feet of private common open space. Residential building additions and/or alterations permitted by the specific plan would be required to match the architectural style of the primary dwelling units, and all new and existing electric utility lines of 34.5 kilovolts would be required to be subsurface throughout the project site.

- **Green and Sustainable Development Standards:** The Green and Sustainable Development Standards require modern telecommunications technology, all homes to meet or exceed Title 24 energy standards, low-water appliances, solid waste/recycling education, sustainable construction practices including clean-burning fuels and material recycling, and native landscaping and irrigation systems in common areas.

- **Permitted Uses and Structures:** The following uses and structures are permitted within the project site: single-family residences with detached garages; attached and detached patios and patio covers; public or private parks; small-family child care/day care facilities; accessory uses conforming to the provisions of Zoning Code Section 17.19; home occupations conforming to the provisions of Zoning Code Section 17.27; cottage food operations conforming to the

provisions of Zoning Code Section17.25; and, model home and subdivision sales trailers and associated structures.

- **Residential Development Standards:** All residential development on the project site would be subject to the development standards contained in Table 3.1 of the proposed Specific Plan. In particular, residential development would have a maximum allowable height of two stories and 35 feet in height for main structures and 15 feet for patio covers. Fences would be limited to 6 feet in height and retaining walls would be limited to 4 feet.

- **Temporary Uses:** Temporary uses would be permitted on the project site pursuant to Zoning Code Chapter 17.41.

- **Open Space Development Standards:** The Open Space Development Standards require a central private common area open space to be provided as well as private pocket parks. All open space improvements would be required to be approved by the City as part of Development Plan Review.

- **Landscaping, Fencing, and Walls:** All landscape and irrigation plans for streetscapes and common area open space including graphic designs with regard to the identity of the Specific Plan, neighborhood identity, or entry monuments shall conform to the regulations as set forth in the proposed Specific Plan and shall be subject to review and approval by the City at the time of Development Plan Review. The form and content of landscape plans for streets, common area open space, and other common areas would be required to conform to the requirements of the City's Development Plan Review application requirements.

- **Signage:** A Master Sign Plan would be required to be submitted and approved by the City subject to Development Plan Review pursuant to Zoning Code Section 17.44.030. The Master Sign Program would be required address residential project entries, residential neighborhood identification signs, and way finding signs within the project. No project signs shall be permitted in the public right-of-way.

- **Lighting:** Lighting on the project site would be prohibited from creating light glare that would be visible beyond any boundary line of the project site, and shield on lighting would be required to prevent up lighting and to shield lighting sources from adjacent residential areas.

The regulations built into the Specific Plan listed above would ensure the visual quality of the project site would not be degraded, as it would limit heights of residences, accessory structures, and fences and walls on the project site to heights similar to those of surrounding residential uses. In addition, many of the regulations listed above, such as open space and signage, would require review and approval by the City, ensuring that they would be consistent with City standards.

As described in Section 4.1.1.7 above, the City's General Plan includes policies that protect scenic quality in the City. In particular, Policy LU-6.1 requires that new development promotes harmony in the visual relationships and transitions between newer and older buildings and Policy CC-1.6 requires private development to enhance public view corridors of the San Gabriel Mountains, where feasible.

As discussed above under Threshold 4.1.1, although development of the project site would result in new residential uses on the project site that would partially further obstruct already limited views of surrounding hillsides and ridgelines, intermittent views of surrounding short- and long-range hillsides and ridgelines would still be available from public vantage points (including East 15th Street) in the vicinity of the project site. Additionally, because the proposed project would occur in an existing urban, developed area that is currently underutilized, the intensification of development on the project site would have a lesser impact on short- and long-range ridgelines compared to new development in a previously undeveloped or sparsely developed area. Implementation of the proposed project would represent a continuation of the existing pattern of residential development in the surrounding area. The proposed project would include single-family residences that would be a maximum of two stories in height and would be similar in density to surrounding residential uses.

As a result of the regulations built into the Specific Plan, the proposed project would not conflict with the visual quality-related policies and programs set forth in the Upland General Plan (including Policies LU-6.1 and CC-1.6) or impede attainment of a complimentary visual relationship between the proposed project and existing and planned development surrounding the site, the project area's overall topography, or short-range and long-range ridgelines. Therefore, impacts would be **less than significant**.

Threshold AES-4: Light and Glare. The project site is located in an urban area with a variety of existing light sources, including street and parking area lights, interior and exterior building lighting, and light associated with traffic on nearby roadways (East 15th Street). The proposed project would result in the introduction of new residential uses to the project site, which would introduce new sources of light and glare to the area in the form of new windows, new interior lighting, new exterior safety and security lighting, and additional automobile presence.

The City's Municipal Code Chapter 17.14, Outdoor Lighting, regulates lighting to avoid creating undue off-site light impacts. New lighting would be required to comply with the standards, subject to review and recommendation by the community development department. Further requirements include the shielding of light fixtures and minimization of foot-candle intensity to minimize impacts on adjacent development, and compatibility with on-site and off-site light sources.

Additionally, the proposed Specific Plan regulates the types of colors and materials that could be used on the project site. The residential architecture of the proposed development would feature a series of styles that are commonly found in Southern California, including Spanish, Italianate, and French Country, which are set to vary among the planned homes. These three styles generally include plaster or stucco walls, stone or brick veneer, and clay tile roofs, and would therefore limit glare-producing materials to new windows.

Overall, although the proposed project would result in an increase in intensity of lighting and glare at the project site, the project site and surrounding areas are already developed and contribute to nighttime illumination and glare under existing conditions, and the proposed project would generally be consistent with existing surrounding uses. While the height and mass of the new buildings would make light from the project site noticeable from off-site locations, it would be absorbed into the overall lighting patterns that already exist in the area. Additionally, the proposed project would be subject to various Municipal Code and General Plan requirements that would

minimize potential impacts related to light and glare that may result from the increase in intensity at the project site. As such, implementation of the proposed project would not create a source of light and glare that would substantially or adversely affect day or nighttime views in the area, and this impact would be **less than significant.**

4.1.2.3 Cumulative Impacts

The geographic area considered for the aesthetic cumulative analysis includes the neighborhoods adjacent to the project site and landscape within the immediate viewshed. Development of proposed on-site uses would be subject to applicable standards, regulations, and design guidelines to create a visually consistent and cohesive pattern of development. It is anticipated that other development in Upland as assumed under the General Plan would equally be subject to these regulations. Because the proposed project and other cumulative development projects would be subject to the City's design review process, it is reasonable to conclude that each project will be conditioned to fully comply with the specific siting, design, and improvement requirements established in its respective zoning district or Specific Plan. As with the proposed project, as each cumulative project incorporates the appropriate City-required conditions, it is reasonable to conclude its project-specific impacts would be similarly reduced to a less than significant level. Therefore, past, present, and future projects in the area are not expected to result in a significant cumulative impact to visual resources, and the project would not make a considerable contribution to such an impact. As such, the project would result in **less than significant** cumulative impacts related to visual resources.

4.2 AIR QUALITY

This section provides a discussion of the proposed project's potential air quality impacts and mitigation measures by examining the short-term construction and long-term operational impacts associated with the project and by evaluating the effectiveness of mitigation measures incorporated as part of the project design. The evaluation was prepared in accordance with appropriate standards, utilizing procedures and methodologies in the South Coast Air Quality Management District (SCAQMD) *CEQA Air Quality Handbook*[1] using the latest California Emissions Estimator Model (CalEEMod) computer program developed and maintained by the SCAQMD. Air quality data from the California Air Resources Board (CARB) and the United States Environmental Protection Agency (EPA) web sites were used to characterize the local air quality environment. This section also summarizes information provided in the Villa Serena Specific Plan Air Quality & Greenhouse Gas Assessment prepared for the proposed project, which is included as Appendix C.[2]

4.2.1 Setting

The project site is in Upland, San Bernardino County, California, which is a part of the South Coast Air Basin (Basin) and under the jurisdiction of the SCAQMD. The Basin, a 6,745-square-mile subregion of the SCAQMD, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes Orange County and the non-desert portions of Los Angeles County, Riverside County, and San Bernardino County.

4.2.1.1 Regional Climate

The annual average temperatures throughout the Basin vary from the low to middle 60 degrees Fahrenheit. The climate of the Basin can be characterized as semi-arid, but the air near the land surface is often moist due to the presence of a marine layer from the Pacific Ocean. Average humidity in the Basin is 71 percent along the coast and 59 percent inland. Most of the Basin's rainfall occurs from November through April. Annual average rainfall varies from 9 inches in Riverside to 14 inches in downtown Los Angeles. Monthly and yearly rainfall totals within the Basin can vary.

Wind patterns across the Basin are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Wind speeds can vary during the dry summer months and the rainy winter season. The Basin is also subjected to Santa Ana wind events, which are strong, dry offshore winds.

4.2.1.2 Climate and Meteorology

Air quality in the project area is not only affected by various emissions sources (e.g., vehicle emissions and stationary industry sources) but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, and amount of sunshine. The topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States combine to give the Basin the worst air pollution problem in the nation. The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific

1 South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*.
2 Urban Crossroads. 2023a. *Villa Serena Specific Plan Air Quality & Greenhouse Gas Assessment.* June 27.

High, a large subtropical high-pressure system that holds air contaminants relatively near the ground.

Winds in the Basin are predominantly of relatively low velocity, averaging about 4 miles per hour (mph). These low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds known as Santa Ana winds occur during the fall and winter months, dispersing air contaminants. These Santa Ana wind conditions tend to last for several days at a time. Local winds at the project site blow predominantly from the south and southwest with an average annual wind speed of about 10 mph. Summertime average wind speeds are slightly higher than winter wind speeds.

During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into eastern Los Angeles, Riverside, and San Bernardino counties. In the winter, the greatest pollution problems are carbon monoxide (CO) and nitrogen oxides (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and nitrous oxide (NO_X) that forms photochemical smog.

4.2.1.3 Air Pollutants and Health Effects

Ozone (O_3). O_3 is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOCs) and nitrogen oxides (NO_X). The main sources of VOCs and NO_X, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. Automobiles are typically the largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide (CO). CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO transport is limited, dispersing with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

Particulate Matter (PM_{10} and $PM_{2.5}$). Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from human-made and natural sources. Particulate matter is categorized in two size ranges: PM_{10} for particles less than 10 microns in size

and $PM_{2.5}$ for particles less than 2.5 microns in size. Motor vehicles are the primary generators of particulates (via tailpipe emissions as well as brake pad, tire wear, and entrained road dust). Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the CARB, studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children.[3] Statewide attainment of particulate matter standards could reduce premature deaths, hospital admissions for cardiovascular and respiratory disease, asthma-related emergency room visits, and episodes of respiratory illness in California.

Nitrogen Dioxide (NO_2). NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter ($PM_{2.5}$), poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high-pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide. SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of EPA regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air have substantially decreased from historic levels.

Toxic Air Contaminants (TACs). In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying

[3] California Air Resources Board (CARB). 2020. *Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10})*. Website: ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health (accessed January 2023).

degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the EPA, CARB, and the SCAQMD. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by the use of diesel-fueled engines.[4] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter (DPM) is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways.

The CARB Diesel Risk Reduction Plan is intended to substantially reduce DPM emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel—a step already implemented—and cleaner-burning diesel engines.[5] The technology for reducing DPM emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions.

High-Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 328 to 656 feet (100 to 200 meters) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust from diesel, gasoline, and other combustion engines is a complex mixture of particles and gases with collective and individual toxicological characteristics.

4.2.1.4 Sensitive Receptors

Some population groups are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the

[4] California Air Resources Board (CARB). 2000a. *Fact Sheet – California's Plan to Reduce Diesel Particulate Matter Emissions*. October. Website: https://ww2.arb.ca.gov/resources/documents/guidance-documents, (accessed January 2023).

[5] CARB. 2000b. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October. Prepared by the Stationary Source Division and Mobile Source Control Division. Website: https://ww2.arb.ca.gov/resources/documents/guidance-documents (accessed January 2023).

elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as "sensitive receptors". These structures typically include uses such as residences, hotels, and hospitals where an individual can remain for 24 hours. Consistent with localized significance threshold (LST) methodology, the land use nearest the project site where an individual could remain for 24 hours was used to determine construction and operational air quality impacts for emissions of PM_{10} and $PM_{2.5}$ because thresholds for both are based on a 24-hour averaging time.

The following describes receptors in the project study area. All distances are measured from the project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, Sensitive receptors are identified below and in **Figure 4.2-1.** The nearest receptor used for evaluation of localized impacts of PM_{10} and $PM_{2.5}$ is location R10 represented by the existing residence at 1540 North Himalayas Circle, approximately 12 feet northwest of the Project site.

- Receptor R1 represents the existing residence at 1168 Upland Hills Drive South, approximately 230 feet north of the project site.
- Receptor R2 represents the existing residence at 1246 Upland Hills Drive South, approximately 161 feet north of the project site.
- Receptor R3 represents the existing residence at 1442 Upland Hills Drive South, 296 feet north of the project site.
- Receptor R4 represents the existing residence at 1512 Grove Avenue, 81 feet south of the project site.
- Receptor R5 represents the existing residence at 1377 E 15th Street, 27 feet south of the project site.
- Receptor R6 represents the existing residence at 1345 E 15th Street, 17 feet south of the project site.
- Receptor R7 represents the existing residence at 1496 Carlos Way, 81 feet south of the project site.
- Receptor R8 represents the existing residence at 1497 Fernando Avenue, 28 feet south of the project site.
- Receptor R9 represents the existing residence at 1030 Sawtooth Drive, 29 feet north of the project site.
- Receptor R10 represents the existing residence at 1540 North Himalayas Circle, 12 feet northwest of the project site.

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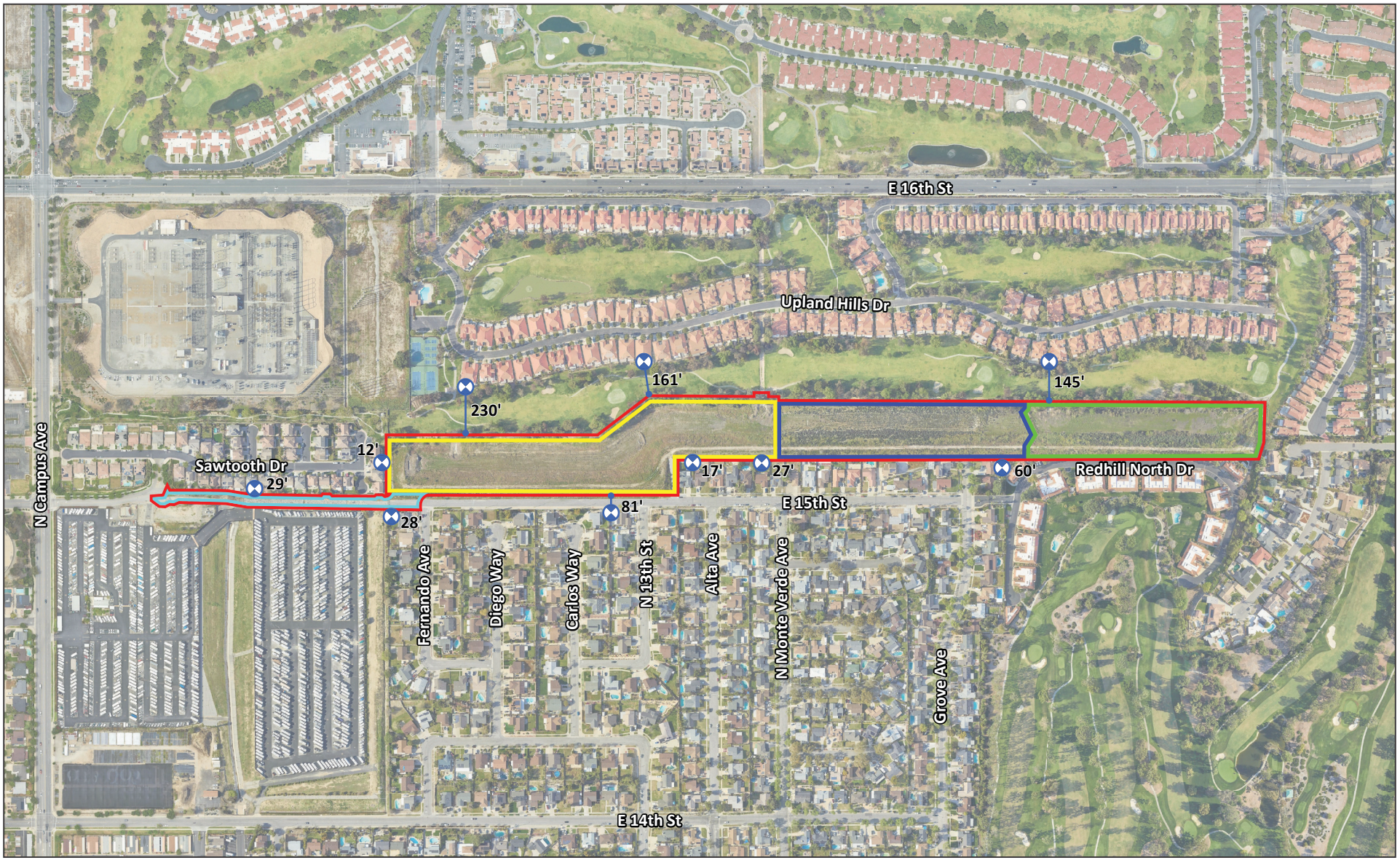

LSA

LEGEND

- Project Site Boundary
- Residential Development Area
- Conservation Area
- Modified Basin
- 15th St Extension and Public Improvements
- Receptor Locations
- Distance from receptor to Project site boundary (in feet)

0 312.5 625
FEET

SOURCE: Google Earth, 2023

I:\TCI2201\G\Sensitive_Receptors.ai (2/15/2024)

FIGURE 4.2-1

Villa Serena Specific Plan

Sensitive Receptors

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4.2.1.5 Regulatory Framework

The SCAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. The USEPA and the CARB regulate direct emissions from motor vehicles.

The following discusses the applicable federal, State, regional, and local framework.

Federal Regulations. At the federal level, the EPA has been charged with implementing national air quality programs. The EPA air quality mandates are drawn primarily from the federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required the EPA to establish primary and secondary National Ambient Air Quality Standards (NAAQS) and required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has the responsibility of reviewing all state SIPs to determine their conformity with the mandates of the FCAA and whether implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The EPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those that may reasonably be anticipated to result in increased deaths or serious illness and are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the EPA on suspected hazardous pollutants prior to regulatory development.

State Regulations. CARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources and provides districts with the authority to regulate indirect sources.

CARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines these data and submits the completed SIP to the EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which

are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The CARB Diesel Risk Reduction Plan is intended to substantially reduce DPM emissions and associated health risks through the introduction of ultra-low-sulfur diesel fuel (a step that has already been implemented) and cleaner-burning diesel engines.[6]

Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the CARB also created guidance for avoiding air quality conflicts in land use planning in its *Air Quality and Land Use Handbook: A Community Health Perspective* (Air Quality and Land Use Handbook).[7] In its guidance, CARB advises that new sensitive uses (e.g., residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

CARB guidance suggests that the use of these guidelines be customized for individual land use decisions and take into account the context of proposed development projects. The Air Quality and Land Use Handbook specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

Regional Regulations. SCAQMD has jurisdiction over most air quality matters in the Basin. This area includes all of Orange County, Los Angeles County (except for Antelope Valley), the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. Policies set by the Southern California Association of Governments (SCAG) also affect air quality within the Basin.

South Coast Air Quality Management District. SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin and is tasked with implementing certain programs and regulations required by the FCAA and the CCAA. SCAQMD prepares plans to attain CAAQS and NAAQS. SCAQMD is directly responsible for reducing emissions from stationary (area and point) sources. SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

- **Regulation IV – Prohibitions:** This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air pollutant emissions, fuel contaminants, start-up/ shutdown exemptions, and breakdown events.

[6] California Air Resources Board (CARB). 2000b. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October. Prepared by the Stationary Source Division and Mobile Source Control Division. Website: https://ww2.arb.ca.gov/resources/documents/guidance-documents, accessed January 2023.

[7] California Environmental Protection Agency (CalEPA) and California Air Resources Board (CARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April.

- **Rule 402 – Nuisance:** This rule restricts the discharge of any contaminant in quantities that cause or have a natural ability to cause injury, damage, nuisance, or annoyance to businesses, property, or the public. The proposed project will be required to comply with Rule 402.

- **Rule 403 – Fugitive Dust:** This rule requires the prevention, reduction, or mitigation of fugitive dust emissions from a project site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM_{10} emissions to less than 50 micrograms per cubic meter ($\mu g/m^3$), and restricts the tracking out of bulk materials onto public roads. Additionally, Rule 403 requires an applicant to utilize one or more of the best available control measures (identified in the tables within the rule). Control measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities. Finally, Rule 403 requires that a contingency plan be prepared if so determined by the EPA. In addition, SCAQMD Rule 403(e), Additional Requirements for Large Operations, includes requirements to provide Large Operation Notification Form 403 N, appropriate signage, additional dust control measures, and employment of a dust control supervisor who has successfully completed the Dust Control training class in the Basin. The proposed project will be required to comply with Rule 403.

- **Regulation XI – Source Specific Standards:** Regulation XI sets emissions standards for different sources.

  - **Rule 1113 – Architectural Coatings:** This rule limits the amount of VOCs from architectural coatings and solvents, which lowers the emissions of odorous compounds. The proposed project will be required to comply with Rule 1113.

SCAQMD is responsible for demonstrating regional compliance with ambient air quality standards but has limited direct involvement in reducing emissions from fugitive, mobile, and natural sources. To that end, SCAQMD works cooperatively with CARB, SCAG, county transportation commissions, local governments, and other federal and State government agencies. It has responded to this requirement by preparing a series of Air Quality Management Plans (AQMPs) to meet the CAAQS and NAAQS. SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. Every several years, SCAQMD prepares a new AQMP, updating the previous plan and the 20-year horizon.[8] The Final 2022 Air Quality Management Plan is the currently adopted AQMP. Key elements of the Final 2022 AQMP include the following:

- Calculating and taking credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)

[8] South Coast Air Quality Management District (SCAQMD). 2022. Final 2022 Air Quality Management Plan. December 2. Website: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan (accessed January 9, 2023).

- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Seeking new partnerships and significant funding for incentives to accelerate deployment of zero-emission and near-zero emission technologies
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on "black box" future technology (FCAA Section 182(e)(5) measures)

The 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, when cost-effective and feasible, and low NO_X technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other FCAA measures to achieve the 2015 8-hour ozone standard.

Southern California Association of Governments. SCAG is a council of governments for Los Angeles, Orange, Riverside, San Bernardino, Imperial, and Ventura Counties. It is a regional planning agency that serves as a forum for regional issues relating to transportation, the economy and community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the Southern California region and the largest MPO in the nation. With regard to air quality planning, SCAG prepares the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP), which address regional development and growth forecasts and form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within local jurisdictions.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan (RCP) provides growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the SCAQMD. The RCP is a framework for decision-making for local governments, assisting them in meeting federal and State mandates for growth management, mobility, and environmental standards while maintaining consistency with regional goals regarding growth and changes. Policies within the RCP include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

SCAG adopted the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), Connect SoCal, on September 3, 2020. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal is an important planning document for the region, allowing project sponsors to qualify for federal funding and takes into account operations and maintenance costs, to ensure reliability, longevity, and cost effectiveness.

Using growth forecasts and economic trends, the RTP provides a vision for transportation throughout the region for the next 20 years. It considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The SCS is a required element of the RTP, which integrates land use and transportation strategies to achieve CARB emissions reduction targets. The inclusion of the SCS is required by Senate Bill (SB) 375, which was enacted to reduce greenhouse gas (GHG) emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. The RTP/SCS would successfully achieve and exceed the GHG emission-reduction targets set by CARB by achieving an 8 percent reduction by 2020, an 18 percent reduction by 2035, and a 21 percent reduction by 2040 compared to the 2005 level on a per capita basis. This RTP/SCS also meets criteria pollutant emission budgets set by the EPA.

City of Upland General Plan. The City of Upland addresses air quality in the Open Space and Conservation Element of the City's General Plan. The Open Space and Conservation Element contains goals, policies, and implementation measures that work toward reducing impacts to air quality at the local level by minimizing pollution and particulate matter. The following goals, policies, and implementation measures related to air quality are presented in the Open Space and Conservation Element[9] and are applicable to the proposed project:

> **Policy OSC-4.1:** Promote land use patterns that reduce the number and length of motor vehicle trips.
>
> **Policy OSC-4.4:** To the extent practicable, separate sensitive land uses from significant sources of air pollutants, toxic air contaminants, or odor emissions.
>
> **Policy OSC-4.6:** Ensure that all land use decisions are made in an equitable manner in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.
>
> **Policy OSC-4.10:** Continue to enforce the vehicle idling restrictions established by the State.
>
> **Policy OSC-4.11**: Review proposed development projects as required by CEQA to ensure projects incorporate feasible measures that reduce construction and operational

[9] City of Upland. 2015. *Upland General Plan: Open Space and Conservation Element*. Website: https://www.uplandca.gov/general-plan-map (accessed January 9, 2023).

emissions for reactive organic gases, nitrogen oxides, and particulate matter through project design.

Policy OSC-4.13: Require best management practices to reduce air pollution associated with construction of development projects.

Policy OSC-4.14: Review construction plans associated with development projects to determine if all feasible mitigation measures are included.

4.2.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to air quality that could result from implementation of the proposed project. The section begins with significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.2.2.1 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would not have a significant impact related to air quality if:

Threshold AIR-1: The proposed project would conflict with or obstruct implementation of the applicable air quality plan.

Threshold AIR-2: The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard.

Threshold AIR-3: The proposed project would expose sensitive receptors to substantial pollutant concentrations.

Threshold AIR-4: Implementation of the proposed project would result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people.

The SCAQMD has developed regional significance thresholds for criteria pollutants, as summarized in **Tables 4.2.A and 4.2.B** below. The SCAQMD's CEQA Air Quality Significance Thresholds[10] indicate that any projects in the Basin with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

[10] South Coast Air Quality Management District. 2023a. *South Coast AQMD Air Quality Significance Thresholds.* March.

Table 4.2.A: SCAQMD Maximum Daily Regional Emissions Thresholds

Air Pollutant	Construction Phase (lbs/day)	Operational Phase (lbs/day)
Volatile organic compounds (VOCs)	75	55
Carbon monoxide (CO)	550	550
Nitrogen oxides (NO_X)	100	55
Sulfur oxides (SO_X)	150	150
Particulate matter less than 10 microns in size (PM_{10})	150	150
Particulate matter less than 2.5 microns in size ($PM_{2.5}$)	55	55

Source: SCAQMD (2023).
lbs/day = pounds per day
SCAQMD = South Coast Air Quality Management District

Table 4.2.B: Maximum Daily Localized Emissions Thresholds

Source	Activity	Emissions (lbs/day)			
		VOCs	NO_X	PM_{10}	$PM_{2.5}$
Construction	Site Preparation	187	1,392	8	6
	Grading	220	1,713	11	7

Source: Villa Serena Specific Plan Air Quality & Greenhouse Gas Assessment. Page 10 (Urban Crossroads, 2023a.)
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
VOCs = volatile organic compounds

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project site are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 parts per million (ppm)
- California State 8-hour CO standard of 9 ppm

4.2.2.2 Project Impacts

The following section discusses the potential air quality impacts associated with implementation of the proposed project.

Threshold AIR-1: Air Quality Plan. A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements,

Specific Plans, and significantly unique projects need to undergo a consistency review because the air quality plan strategies are based on projections from local General Plans.

Consistency with the 2022 AQMP would be achieved if the project is consistent with the goals, objectives, and assumptions in this plan to achieve the NAAQS and CAAQS. Per SCAQMD's *CEQA Air Quality Handbook*, there are two main indicators of a project's consistency with the AQMP:

- **Indicator 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or emission reductions in the AQMP.

- **Indicator 2:** Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

  Indicator 1. The violations under this criterion refer to the CAAQS and NAAQS. Violations under both air quality standards would occur if regional or localized significance thresholds defined in Section 4.2.2.1 above were exceeded. As discussed in Threshold AIR-2 below, the proposed project's regional and localized construction and operations-source emissions would not exceed applicable regional and local significance thresholds. A less than significant impact is anticipated. Therefore, the proposed project would be consistent with the first criterion.

  Indicator 2. The 2022 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from the local general plans adopted by cities within the AQMD are provided to SCAG, which develops regional growth forecasts that are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections identified in the City of Upland General Plan is considered to be consistent with the AQMP.

  Peak day emissions generated by construction activities are largely independent of land use assignments but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities. As discussed above for Indicator 1, the proposed project's regional and local construction and operation-source emissions would not exceed the assumptions in the AQMP. As such, when considering that no emissions thresholds would be exceeded, a less than significant impact would result. Therefore, the project would be consistent with the AQMP, a **less than significant** impact would occur, and no mitigation is required.

Threshold AIR-2: Criteria Pollutants. Both the EPA and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are O_3 (precursor emissions include NO_X and reactive organic gases [ROGs]), CO, PM, NO_2, SO_2, and lead.

Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as non-attainment areas.

The CAAQS designate the region in which the project site is located as non-attainment for O_3, PM_{10}, and $PM_{2.5}$, while the NAAQS designates the region in which the project site is located as non-attainment for O_3 and $PM_{2.5}$.

The Air Quality & Greenhouse Gas Assessment[11] prepared for the proposed project assumes that individual projects that do not generate operational or construction emissions exceeding SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

Construction-Related Emissions. The estimated maximum daily construction emissions without mitigation are summarized in **Table 4.2.C**. Under the anticipated construction scenario of approximately 24 months, emissions resulting from project construction would not exceed thresholds established by the SCAQMD for emissions of any criteria pollutant.

The estimated localized impacts at the nearest sensitive receptor location in the vicinity of the project site are summarized in **Table 4.2.D**. Outputs for the model runs for construction LSTs are provided in the Air Quality and Greenhouse Gas Emissions Assessment prepared for the proposed project (see Appendix C).

Emissions associated with site preparation and grading activities are considered for the purposes of LSTs since these phases represent the maximum localized emission that would occur. The other anticipated construction phases that overlap would result in lesser emissions and consequently lesser impacts than what is disclosed herein. Emissions from project construction would not exceed the numerical thresholds of significance established by the SCAQMD for any criteria pollutant.

Construction-source air pollutant emissions from the proposed project would not result in exceedances of regional and local thresholds. Therefore, construction-source emissions would be considered less than significant on a project-specific and cumulative basis. Impacts would be **less than significant**, and no mitigation is required.

11 Urban Crossroads. 2023a. Villa Serena Specific Plan Air Quality & Greenhouse Gas Assessment.

Table 4.2.C: Overall Regional Construction Emissions Summary

Source	Emissions (lbs per day)					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
2024	1.42	12.5	16.3	0.03	0.91	0.59
Winter						
2024	4.58	45.8	36.4	0.14	8.78	4.81
2025	39.9	7.53	10.9	0.01	0.54	0.37
Maximum Daily Emissions	**39.9**	**45.8**	**36.4**	**0.14**	**8.78**	**4.81**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: Villa Serena Specific Plan Air Quality & Greenhouse Gas Emissions Assessment, Table 3, page 10 (Urban Crossroads. 2023a).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = oxides of sulfur
VOCs = volatile organic compounds

Table 4.2.D: Localized Construction Impacts Summary

On-Site Emissions	Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation				
Maximum Daily Emissions	**42.5**	**35.3**	**7.91**	**4.76**
SCAQMD Localized Threshold	187	1,392	8	6
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**
Grading				
Maximum Daily Emissions	**23.1**	**20.6**	**3.62**	**2.16**
SCAQMD Localized Threshold	220	1,713	11	7
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**

Source: Villa Serena Specific Plan Air Quality & Greenhouse Gas Emissions Assessment, Table 5, page 13 (Urban Crossroads. 2023a).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District

Operational Emissions. The estimated operation-source emissions from the proposed project are summarized in **Table 4.2.E**. Operational-source emissions from the project would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant. Therefore, proposed project operational source emissions would be considered less than significant on a project-specific and cumulative basis. Impacts would be **less than significant**, and no mitigation is required.

Table 4.2.E: Regional Operational Emissions Summary

Source	Emissions (lbs/day)					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Mobile	2.47	2.22	20.8	0.05	1.68	0.33
Area	3.32	1.01	4.09	0.01	0.08	0.08
Energy	0.03	0.51	0.22	<0.005	0.04	0.04
Total Maximum Daily Emissions	**5.82**	**3.74**	**25.11**	**0.06**	**1.8**	**0.45**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Winter						
Mobile	2.29	2.38	17.5	0.05	1.68	0.33
Area	2.99	0.97	0.41	0.01	0.08	0.08
Energy	0.03	0.51	0.22	<0.005	0.04	0.04
Total Maximum Daily Emissions	**5.31**	**3.86**	**18.13**	**0.06**	**1.8**	**0.45**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: Villa Serena Specific Plan Air Quality & Greenhouse Gas Emissions Assessment, Table 4, page 11 (Urban Crossroads, 2023a).

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = oxides of sulfur
VOCs = volatile organic compounds

Threshold AIR-3: Substantial Pollutant Concentrations. Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable NAAQS or CAAQS at the sensitive receptor. The sensitive receptors have been previously identified in Section 4.2.1.4 and **Figure 4.2-1**.

Construction and Operation LST Analysis. As shown in **Tables 4.2.C through 4.2.E** above, emissions would not exceed the SCAQMD localized significance thresholds during both construction and operation. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during project construction and as a result of project operations. Impacts would be less than significant, and no mitigation is required.

CO Hot Spot Analysis. Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts to nearby sensitive receptors would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, which is a direct function of vehicle idling time and thus of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, CO disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable LOS or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

At the time of the publishing of the 1993 *CEQA Air Quality Handbook*[12], the Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Basin and in California have steadily declined. In 2007, SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS. As identified within SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak CO concentrations in the Basin were a result of unusual meteorological and topographical conditions and not a result of congestion at specific intersections. A CO hot spot analysis that was conducted at four busy intersections in Los Angeles County at the peak morning and afternoon periods did not predict a violation of CO standards.[13] Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph), or 24,000 vph where vertical and/or horizontal air does not mix, in order to generate a significant CO impact.[14] One of the worst intersections in the Basin (i.e., Sunset Boulevard/Highland Avenue)[15] is in Los Angeles, approximately 66 miles west of the proposed project. Since SCAQMD-modeled intersections do not exceed the CO standards, intersections within the project study area with less volumes of traffic and under less extreme conditions would not exceed the CO standards. Buildout of the proposed project would not produce the volume of traffic, as described above, required to generate a CO hot spot that would affect nearby sensitive receptors. Therefore, implementation of the proposed project would not be expected to result in CO hot spots, and impacts would be **less than significant**. No mitigation is required.

Threshold AIR-4: Odors. Land uses generally associated with odor complaints include:

- Agricultural Uses (Livestock and Farming)
- Wastewater Treatment Plants
- Food Processing Plants

12 South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993), accessed January 9, 2023.

13 The four intersections were Long Beach Boulevard/Imperial Highway, Wilshire Boulevard/Veteran Avenue, Sunset Boulevard/Highland Avenue, and La Cienega Boulevard/Century Boulevard. The busiest intersection evaluated (i.e., Wilshire Boulevard/Veteran Avenue) had a daily traffic volume of approximately 100,000 vehicles and LOS E in the morning peak hour and LOS F in the evening peak hour.

14 Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf (accessed January 9, 2023).

15 The intersection of Sunset Boulevard/Highland Avenue is within the city limits of Los Angeles and is used to represent a condition with a high volume of traffic during the a.m. and p.m. peak hours to demonstrate that intersections below the volume of traffic at this particular intersection, under less severe atmospheric conditions (i.e., where vertical and horizontal air does not mix), would not result in a CO hot spot.

- Chemical Plants
- Composting Operations
- Refineries
- Landfills
- Dairies
- Fiberglass Molding Facilities

The project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed project may result from construction equipment exhaust and the application of asphalt and architectural coatings during the construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed project's operational uses. Standard construction equipment would minimize odor impacts from construction. Construction odor emissions would be temporary, intermittent in nature, would cease upon completion of the respective phase of construction, and therefore would be considered less than significant. It is anticipated that project-generated refuse upon operation would be stored in covered containers and removed at regular intervals in compliance with local solid waste regulations. The proposed project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances.[16] No other sources of objectionable odors have been identified for the proposed project. Therefore, odors associated with the proposed project construction and operations would be **less than significant**. No mitigation is required.

4.2.2.3 Cumulative Impacts

As defined in Section 15130 of the *CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probably future projects within the cumulative impact area for air quality. The cumulative study area analyzed for potential air quality impacts is the Basin. Each project in the Basin is required to comply with SCAQMD rules and regulations and is subject to independent review.

The Basin is currently designated as a nonattainment area for the federal O_3 standard and $PM_{2.5}$ standard and as a nonattainment area for the State O_3, PM_{10}, and $PM_{2.5}$ standards. Thus, the Basin has not met the federal and State standards for these air pollutants. Future development that may occur with implementation of the project would contribute criteria pollutants to the area during project construction and operation.

Air pollution is inherently a cumulative type of impact measured across an air basin. The proposed project would have a cumulatively considerable impact if project-generated emissions would exceed thresholds for NO_X, VOCs, PM_{10}, and/or $PM_{2.5}$. If the proposed project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still have a cumulatively considerable impact on air quality and GHG if the emissions from the project, in

[16] SCAQMD Rule 402 regarding nuisances: "*A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.*"

combination with emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the proposed project would be considered to have a cumulative impact only if its contribution accounts for a significant portion of the cumulative total emissions.

The project would contribute criteria pollutants to the area during construction. A number of individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with the SCAQMD standard construction measures. The proposed project's short-term construction CO, NO_2, PM_{10}, and $PM_{2.5}$ emissions would not exceed the LSTs. The proposed project's operational emissions would not exceed the LSTs. Therefore, construction and operation of the proposed project would have a less than significant impact with regard to regional and localized emissions. Cumulative impacts would be considered **less than significant**.

4.3 BIOLOGICAL RESOURCES

This section describes the potential impacts to biological resources that may result from construction and operation of the proposed project. Information in this section is based on the following site-specific biological resource studies:

- *Biological Resources Technical Report Villa Serena Specific Plan* (Tract No. 20245) Project, Aspen Environmental Group, September 2022 (Appendix D-1)
- *San Bernardino Kangaroo Rat and California Gnatcatcher Habitat Assessment for a 26.3 acre parcel located in Upland, San Bernardino County, California*, Origin Biological, January 10, 2023 (Appendix D-2)
- *Villa Serena Specific Plan; Nesting Bird and California Gnatcatcher Habitat Assessment*, Dugan Biological Services, May 10, 2023 (Appendix D-3)
- *Aquatic Resources Delineation Report Villa Serena Specific Plan (Tract No. 20245) Project*, Aspen Environmental Group, September 2023 (Appendix D-4)

4.3.1 Methodology

The impact analysis presented in this section evaluates potential direct, indirect, and cumulative impacts of the proposed project on biological resources and habitats within the project site and considers whether the proposed project would conflict with relevant plans, policies, or regulations contained in applicable planning documents adopted by the City and other agencies for the purpose of avoiding or mitigating an environmental effect that could cause a significant environmental impact or would result in an environmental impact to biological resources. This section also evaluates the proposed project's consistency with applicable habitat conservation plans and policies. Under this approach, a policy or program conflict is not in and of itself considered a significant environmental impact. An inconsistency between the proposed project and an applicable plan is a legal determination that may or may not indicate the likelihood of an environmental impact. In some cases, an inconsistency may result in an underlying physical impact that is significant and adverse.

4.3.1.1 Literature Review

The biological resource reports (Appendices D-1 through D-4) include a literature review of the following sources to identify special-status biological resources known from the vicinity of the project site:

- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) for the project site
- California Natural Diversity Database for the following 7.5-minute Unites State Geological Survey topographic quads within 5 miles of the project site: *Mt. Baldy*, *Ontario*, *Glendora*, *San Dimas*, *Guasti*, *Cucamonga Peak*, *Yorba Linda*, *Prado Dam*, and *Corona North*
- CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California for the topographic quads listed above.

4.3.1.2 Biological Resources Surveys and Habitat Assessments

Site-specific field surveys, biological resources surveys (Appendix D-1), protocol-level surveys for California gnatcatcher and San Bernardino kangaroo rat (Appendix D-2), nesting birds (Appendix D-3), and aquatic resources (see Appendix D-4) were conducted on following dates:

- **General Biological Resource Surveys:** January 1, February 16, March 16, April 3, and April 25, 2022 (RCA Associates)
- **California Gnatcatcher/San Bernardino Kangaroo Rat Surveys:** June 3 and July 1, 2022 and January 9, 2023 (Origin Biological)
- **California Gnatcatcher/Nesting Bird Survey:** April 16, 2023 (DBS)

4.3.1.3 Waters and Wetlands Delineation

The assessment of jurisdictional wetlands, waters of the United States, waters of the State, and other jurisdictional habitats was conducted on June 24 and August 15, 2022 (Aspen Environmental). A review of current and historic aerial photographs, the San Bernardino County Soil Survey, and the local and State hydric soil list databases was conducted prior to the field assessment to evaluate the potential active channels and wetland features of the project site.

Site maps were generated with available aerial photographs and potentially jurisdictional features were identified and marked with lines and GPS coordinates to assist in field verification. Vegetation and hydrology were mapped using an Arrow GPS unit and identified on aerial photographs. Field maps were digitized using GIS, and total State and federal jurisdictional areas were calculated. Representative site photos were captured during the survey and are included in the Aquatic Resources Delineation Report (ARDR) (see Appendix D-4.).

4.3.2 Setting

The project site consists of the following components:

- An undeveloped, 9.16-acre portion of the 15th Street flood control basin on the northeast corner of the intersection of Fernando Avenue and East 15th Street. This area is planned for the development of 65 single-family residences, private community facilities, and ancillary features.

- A 6.85-acre area within the 15th Street flood control basin that is outside, but directly east of, the residential development footprint. The project site is currently mapped in the National Wetland Inventory as freshwater emergent wetland and as freshwater pond habitat. Modifications to this portion of the basin (see Section 3.3.7) will accommodate appropriate stormwater and flood control capacity.

- A 4.29-acre "conservation area" at the extreme eastern boundary of the basin. This portion of the existing basin will remain unaffected by project activities. As detailed on the precise grading plan prepared for the project, no work, access, or storage is allowed within this area.

- A 0.78 acre off-site for the construction of the 15th Street extension and a public 'pocket park' near the north end of Fernando Avenue.

Surrounding land consists of a mix of land uses, including residential, public, and recreational areas (Upland Hills Country Club). The project site is currently used as flood control basin (see **Figure 4.3-1**).

4.3.2.1 Vegetation

Vegetation within the project site consists of riparian and wetland vegetation, upland vegetation, and other land cover types. Species observed include mule fat (*Baccharis salicifolia*), coast live oak (*Quercus agrifolia*), broadleaf cattail (*Typha latifolia*), marsh purslane (*Ludwigia peploides*), California buckwheat (*Eriogonum fasciculatum*), coastal sage brush (*Artemisia californica*), scale broom (*Lepidospartum squamatum*), and black sage (*Salvia mellifera*). The vegetation and land covers within the project site are described in detail below, and the acreages of the vegetation and land cover types are presented in **Table 4.3.A** and **Figure 4.3-2**.

Table 4.3.A: Vegetation and Other Cover Types on the Project Site

Vegetation Type	Development Area (acres)	Conservation Area (acres)	Project Site (acres)
Riparian and Wetland			
Cattail marshes	0.08	0.18	0.25
Mule fat scrub	-	0.17	0.17
Upland Vegetation			
California buckwheat scrub	5.39	2.55	7.94
Eucalyptus – tree of heaven – black locust groves	0.89	0.64	1.53
Scale broom scrub	0.14	-	0.14
Other Cover Types			
Developed	11.30	0.74	12.04
Total	**17.79**	**4.29**	**22.08**

Source: Table 2, *Aquatic Resources Delineation Report* (Aspen Environmental Group 2023).
Note: "Project Site" includes the area for residential development, basin modification, off-site improvements, and the "conservation area." "Development Area" includes the area for residential development, basin modification, and off-site improvements only.

The California Department of Fish and Wildlife (CDFW) ranks sensitive natural communities involving the knowledge of range and distribution of a given type of vegetation, and the proportion of occurrences that are of good ecological integrity. Threats and trends are likely considered in categories such as residential and commercial development, agriculture, energy production and mining, and invasive and other problematic species and genes (among others). Threat scope and severity are used to calculate an overall threat score, which is added to the overall rarity score for a single rank of 1 through 5. Evaluation is done at both the Global (full natural range within and outside of California) and State (within California) levels resulting in a single G (global) and S (state) rank ranging from 1 (very rare and threatened) to 5 (demonstrably secure). Natural communities with ranks of S1 to S3 are considered sensitive natural communities for the purposes of CEQA.[1]

[1] California Department of Fish and Wildlife. 2023. Natural Communities. Website: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities (accessed September 2023).

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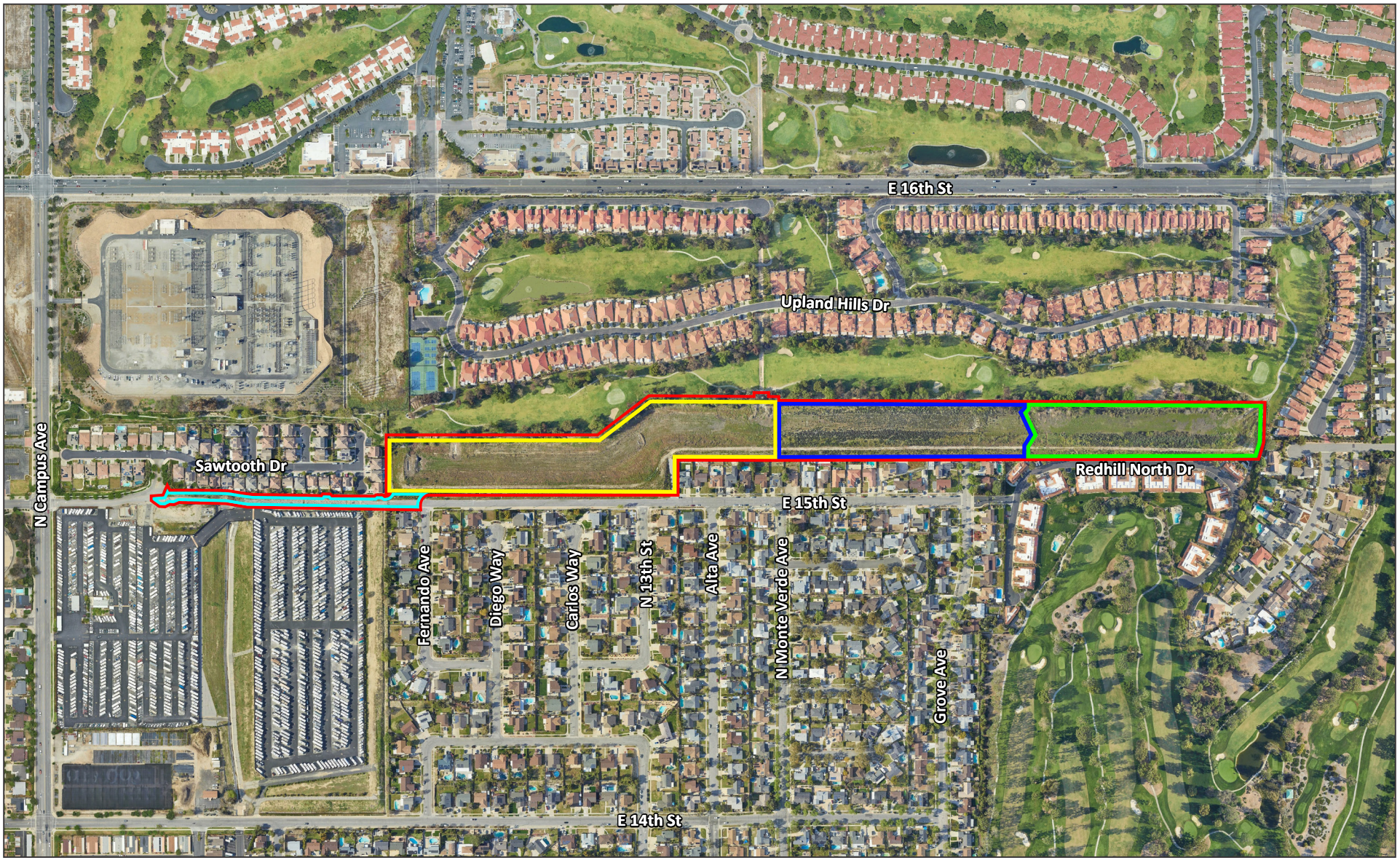

LSA

LEGEND

- Project Site Boundary
- Residential Development Area
- Conservation Area
- Modified Basin
- 15th St Extension and Public Improvements

0 312.5 625

FEET

SOURCE: Google Earth, 2023

FIGURE 4.3-1

Villa Serena Specific Plan

Project Site Overview

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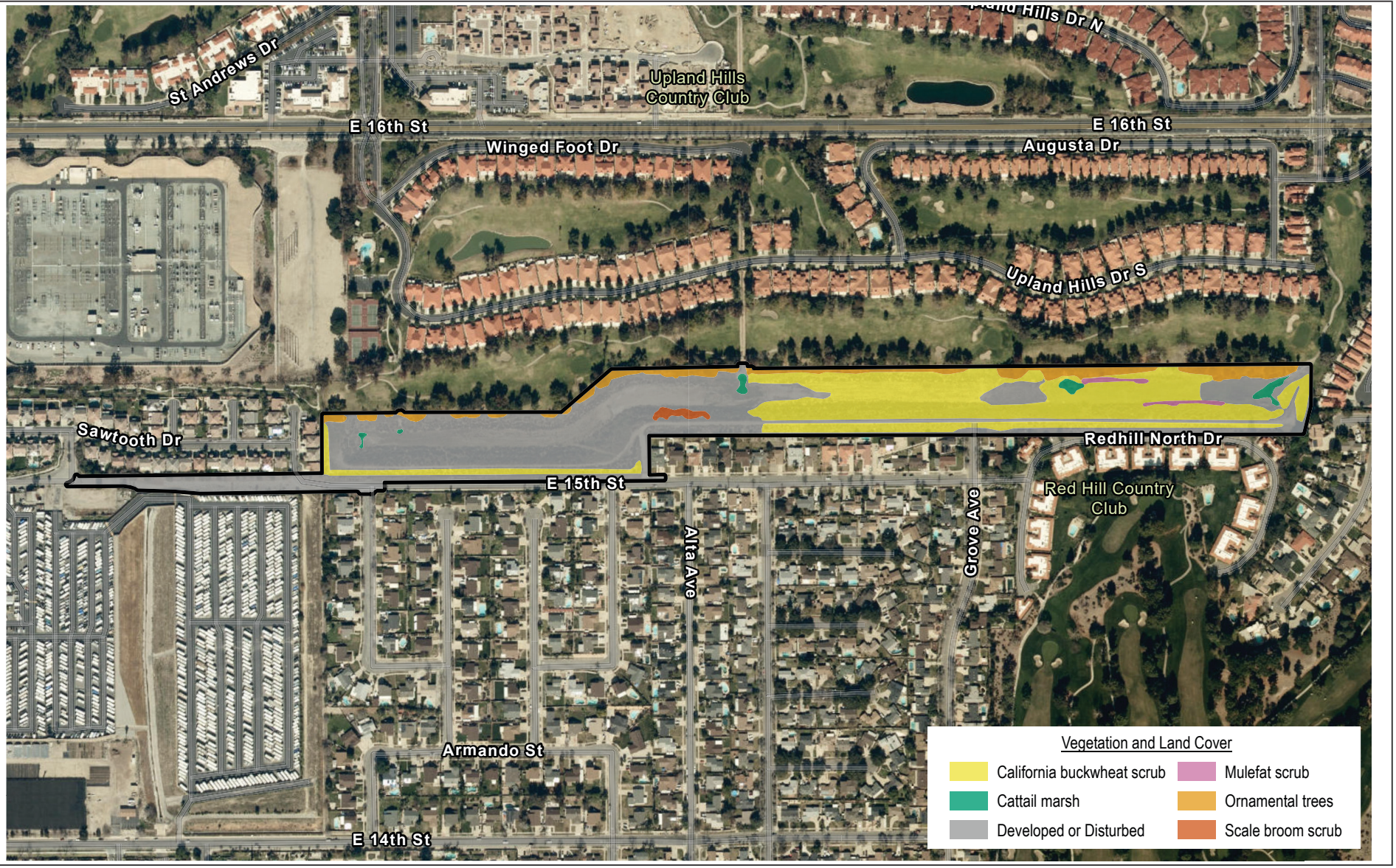

LSA

LEGEND

- Project Site Boundary

FIGURE 4.3-2

N

0 250 500

FEET

SOURCE: Aquatic Resources Delineation Report, Aspen Environmental, September 2023

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Villa Serena Specific Plan

Vegetation and Land Cover

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Riparian and Wetland Vegetation Types.

Cattail Marshes. The project site contains 0.08 acre of Cattail marsh habitat. This habitat is dominated by broadleaf cattail (*Typha latifolia*), but other species such as marsh purslane (*Ludwigia peploides*), watercress (*Nasturtium officinale*), seep monkeyflower (*Mimulus guttatus*), Dallis grass (*Paspalum dilatatum*), cocklebur (*Xanthium strumarium*), and Spanish sunflower (*Pulicaria paludosa*) are also present. Cattail marshes are present in the low-lying portions of the project site that accumulate runoff and storm flows from the adjacent golf course and watershed. Cattail marshes have a State Rank of S5 and are not recognized as a sensitive natural community by the CDFW.

Mule Fat Thickets. The project site does not contain Mule fat thicket habitat; however, it is present within the adjacent conservation area. This habitat is dominated by mule fat, but other species such as Gooding's black willow (*Salix gooddingii*), Chinese elms (*Ulmus parvifolia*), and California sycamore (*Platanus racemosa*) are also present. The mule fat thickets are present along the northern and southern edges of the basin floor. Mule fat thickets have a State Rank of S4 and are not recognized as a sensitive natural community by the CDFW.

Upland Vegetation Types.*California Buckwheat Scrub.* The project site contains 0.69 acre of California buckwheat scrub habitat. California buckwheat dominates this habitat, but other species such as pine brush (*Ericameria pinifolia*), broom baccharis (*Baccharis sarothroides*), coastal sage brush, black sage, showy penstemon (*Penstemon spectabilis*), and holly leaf cherry (*Prunus ilicifolia*) are also present. California buckwheat has a State Rank of S5, and the CDFW does not recognize it as a sensitive natural community.

Eucalyptus – Tree of Heaven – Black Locust Groves. The project site contains 0.37 acres of Eucalyptus – tree of heaven – black locust groves habitat. This habitat is dominated by non-native trees such as gum trees (*Eucalyptus spp*.), crepe myrtle (*Lagerstroemia indica*), goldenrain tree (*Koelreuteria bipinnata*), and others. Native tree species such as California sycamore and coast live oak are also present but generally represent single trees and not a continuous canopy. Eucalyptus – tree of heaven – black locust groves have a State Rank of SNA (Not Applicable) and the CDFW does not recognize them as sensitive natural communities.

Scale Broom Scrub. The project site contains 0.14 acre of scale broom scrub habitat. This habitat is dominated by scale broom, but other species such as California buckwheat and deerweed (*Acmispon glaber*) are present in low numbers. Scale broom scrub is present on one slope within the project site. Scale broom scrub has a State Rank of S3 and is recognized as a sensitive natural community by the CDFW.

Other Cover Types.

Developed. The project site contains 7.86 acres of disturbed and developed areas, which includes unpaved roads, drainage structures, and unvegetated slopes and basin floors. Sparse vegetation is present and includes weedy species such as wild oat (*Avena spp*.), ripgut brome (*Bromus diandrus*), red brome (*Bromus rubens*), mustard (*Hirschfeldia incana*), and tocalote (*Centaurea melitensis*). "Developed" is not a vegetation type and the CDFW does not recognize it as a sensitive natural community.

4.3.2.2 Plant Species

Plant and wildlife taxa were considered to be special-status species if they were found as endangered, threatened (or a candidate for or species proposed for listing) under the California (CESA) or federal Endangered Species Act (FESA). Plants or wildlife may be ranked as special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. Other species may have not been listed, but declining populations or habitat availability cause concern for their long-term viability. These species of conservation concern appear on lists compiled by resource agencies or private conservation organizations. The "special-status" plant species occurring in the region in habitats similar to those found on the project site include:

- Nevin's barberry (*Bereris nevinii*) (federally endangered)
- Plummer's mariposa lily (*Calochortus plummerae*)
- Lucky morning-glory (*Calyestgia felix)*
- Parry's spineflower (*Chorizanthe parryi* var.)
- Mesa horkelia (*Horkelia cuneata* var.)
- California satintail *(Imperata brevifolia*)
- Robinson's pepper-grass (*Lepidium virginiicum* var. *robinsonii*)
- Southern California black walnut (*Juglans californica*)
- White rabbit-tobacco (*Pseudognaphalium luecocephalum*)
- Sanford's arrowhead (*Sagittaria sanfordii*)

Listed Threatened or Endangered Plants.[2] No listed plant species are known from the project site and none were observed during the biological field surveys.

Other Special-Status Plants. Though not listed as endangered or threatened under the State or federal ESA, the CDFW and the California Native Plant Society (CNPS) maintain lists of plants of conservation concern. The plants are treated as "special-status species" and are discussed below:

- **Parry's spineflower (*Chorizanthe parryi* var. *parryi*)** is an annual herb endemic to southern California and occurs in Los Angeles, Ventura, San Bernardino, Riverside, and San Diego counties. The herb is found on sandy or rocky soils in coastal scrub, chaparral, cismontane woodland, and alley and foothill grassland at elevations from 900 to 4,000 feet, and flowers from April to June. The project site contains suitable habitat for Parry's spineflower. The herb is also known from several extinct occurrences within five miles of the project site. Although there is a low to moderate potential for this species to germinate and be present in the project site in a year with above average rainfall, this species was not detected during the biological field surveys.

- **Southern California black walnut (*Juglans californica*)** and **Robinson's pepper-grass (*Lepidium verginicum* var. *robinsonii*)** have at least a moderate potential to occur on the project site. Both species are known from within 5 miles of the project site. Neither of these species were detected on-site during biological field surveys.

[2] Aspen Environmental. 2022. *Biological Resources Technical Report*, Table 2. September.

4.3.2.3 Animal Species

The project site currently provides suitable habitat for common animal species, including but not limited to:

- Western fence lizard (*Sceloporus occidentalis*)
- Black phoebe (*Sayornis nigricans*)
- Lesser goldfinch (*Spinus psaltria*)
- House finch (*Haemorhous mexicanus*)
- Turkey vulture (*Cathartes aura*)
- Coyote (*Canis latrans*)
- California ground squirrel (*Otospermophilus beecheyi*)
- Mallard (*Anas platyrhynchos*)
- Great egret (*Ardea alba*)
- Great blue heron (*Ardea Herodias*)
- Common yellow throat (*Geothlypis trichas*)
- Pacific chorus frog (*Pseudacris regilla*)
- Western toads (*Anaxyrus boreas*)
- Bobcats (*Lynx rufus*)
- Raccoon (*Procyon lotor*)
- Opossum (*Didelphis marsupialis*)
- Striped skunks (*Mephitis mephitis*)
- Desert cottontail (*Sylvilagus audubonii*)

Listed Threatened or Endangered Wildlife. The project site supports habitat for four listed species and one candidate species with at least a moderate potential to be present on the project site. None of these species are known from the project site or were identified on-site during biological resource field surveys. These species include:

- **Least Bell's vireo (*Vireo bellii pusilus*)** is a small songbird that nests in riparian vegetation throughout much of southern California. It is listed as endangered under both the federal ESA and the CESA. Least Bell's vireo are known to nest at the Cucamonga Basin, 0.7 mile north of the project site. Suitable riparian habitat for Least Bell's vireo is present on the project site, although there is a low potential for the species to be present. This species was not observed on-site during biological resource field surveys.

- **Coastal California gnatcatcher (*Polioptila californica californica*)** is a small bird that occurs in coastal areas of southern California from Ventura County, inland to the Santa Clarita area, Banning area, and southward through northwestern Baja California. It is listed as threatened under the FESA. Coastal California gnatcatcher are known to occur in larger intact patches of sage scrub near Puddingstone Reservoir and within the North Etiwanda Preserve, both more than seven miles from the project site. The nearest designated critical habitat for Coastal California gnatcatcher is located near Puddingstone Reservoir, approximately seven miles west of the project site. Coastal California gnatcatcher have a low potential to be present on the project site.

- **Swainson's Hawk (*Buteo swainsoni*)** is a large bird that nests in the San Joaquin Valley, western Antelope Valley, and Owens Valley. It is listed as threatened under the CESA. Swainson's hawks migrate along the Pacific flyway south to South America every fall and return to California every spring. Several Swainson's hawks have been observed in the vicinity of the project site during migration. The project site is outside of the breeding range of Swainson's hawks, but individuals may migrate over the area biannually. There is a moderate potential for Swainson's hawks to be present on the project site during migration periods.

- **Tricolored blackbird (*Agelaius tricolor*)** is a small bird that nests in emergent marshland vegetation such as cattails (*Typha sp*.) and tules (*Schoenoplectus sp*.). It is listed as threatened under the CESA. Tricolored blackbirds have been observed at Puddingstone Reservoir and throughout the Chino Basin. Tricolored blackbirds have not been observed on the project site, but the project site does provide limited nesting habitat and suitable foraging habitat. There is a moderate potential for tricolored blackbirds to forage and low potential for nesting within the project site.

- Overwintering populations of **monarch butterfly (*Danaus plexippus pop. 1*)** in California are a candidate for federal listing under the ESA, but the listing would only protect the overwintering sites and not the individual butterflies or their food plants. Monarchs and their food plants are widespread in California, though the project site does not contain milkweed. Winter roost sites of monarchs extend along the coast from northern Mendocino to Baja California and are generally located in wind-protected tree groves. Although monarchs have a high potential to be present on the project site, the project site is too far inland to support winter roosting habitat.

Species Protected Under the Federal Bald and Golden Eagle Protection Act. Bald eagles and golden eagles are observed periodically in the region but are not expected to utilize the project site for nesting due to the absence of suitable nesting habitat. Bald eagles are not expected to forage on the site due to the lack of suitable prey items. Golden eagles also have a low potential to forage on the site due to the limited foraging area and the limited amount of prey items. Neither species was observed on-site during biological resource field surveys.

California Wildlife Species of Special Concern. The following California Wildlife Species of Special Concern have the potential to occur on the project site:

- **Coastal whiptail (*Aspidoscelis tigris stejnegeri*)** are found in coastal southern California, mostly west of the Penninsular Ranges and south of the Transverse Ranges. Coastal whiptail ranges north into Ventura County and south to Baja California. Coastal whiptail were observed at three locations within the project site and are expected to occur throughout the project site.

- **Burrowing owl (*Athene cunicularia*)** are uncommon throughout much of Southern California but are periodically observed in the Inland Empire, with the highest local concentrations near Ontario, approximately 5 miles southeast of the project site. Suitable burrowing owl burrows are present on the project site but limited. Despite marginally suitable habitat for burrowing owl, the project site contains a sufficient prey base and an abundant ground squirrel population (for producing burrows). While not observed on-site during biological resource field surveys,

there is a moderate potential for breeding or wintering burrowing owls to be present on the site.

- **Yellow-breasted chat (*Icteria virens*)** occur in California only during the breeding season between April and August and is scarce in the central and southern portions of the State. Yellow-breasted chat are known to nest at Cucamonga Basin, 0.7 mile north of the project site. Although this species was not observed on-site during biological resource field surveys, marginally suitable riparian habitat for yellow-breasted chat habitat is present and there is a moderate potential for yellow-breasted chat to be present on the project site.

- **Yellow warbler (*Setophaga petechia*)** occurs in California only during the breeding season between April and August, in riparian habitats throughout the State. Yellow warbler have not been previously detected on the project site but are known from several locations within 1 mile of the project site. Although this species was not observed on-site during biological resource field surveys, suitable habitat is present throughout the project site, and there is a moderate potential for them to be present.

- **San Diego desert woodrat (*Neotoma lepida intermedia*)** occurs in coastal and desert scrub and rocky outcrops throughout much of southern California. Although this species was not observed on-site during biological resource field surveys, the project site contains suitable habitat for the species, which has been documented within 5 miles of the project site.

- **Cooper's hawk (*Accipiter cooperii*)** nest in forest and woodland habitat and hunts in woods and open areas. Cooper's hawks breed through most of the United States and winters south through Mexico. The project site contains suitable nesting habitat, and one individual was observed foraging on the project site.

- **Pallid bat (*Antrozous pallidus*), Western mastiff bat (*Eumops perotis californicus*), hoary bat (*Lasiurus cinereus*), Western yellow bat (*Lasiurus xanthinus*), Yuma myotis (*Myotis yumanensis*), big free-tailed bat (*Nyctinomops macrotis*)**, and **pocketed free-tailed bat (*Nyctinomops femorosaccus*)** have at least a low potential to forage over the project site. The pallid bat and Western mastiff bat forage in open areas over grasslands, agricultural areas, and other shrublands and roost in a variety of habitats including buildings, rock crevices, and caves. The pocketed free-tailed bat forages over water and open shrublands and roosts in crevices in cliffs. Hoary bats may roost in tree foliage within the project site. The remaining species are unlikely to roost in the project site due to a lack of suitable roosting habitat. These species were not observed on-site during biological resource field surveys.

Other Special-Status Wildlife. The following special-status species also have the potential to occur on the project site:

- **Crotch bumble bee (*Bombus crotchii*)** was recently petitioned for listing under the CESA but was determined to not be eligible for protection under CESA. It is currently recognized as a special animal but may be petitioned again in the future based on a recent interpretation of CESA, which indicates that some invertebrates may be eligible for protection. Crotch bumble bee is typically found in openings in grassland and scrub habitats. Crotch bumble bees feed on native

plants including milkweed, pincushion, lupine, phacelia, sage, snapdragon, clarkia, bush poppy, and buckwheat. Many of these food plants are present on the project site and suitable burrowing habitat is also present. Crotch bumblebee has a moderate potential to be present on the site and is known from numerous observations in the region.

- **Cooper's hawk (*Accipiter cooperii*)** and **white-tailed kite (*Elanus leucurus*)** are known to nest in and around urban areas of southern California and forage in open space. Suitable nesting habitat for these species is limited and foraging habitat for these species is present within the project site. A single Cooper's hawk was observed flying over the project site during the biological resource field survey. The white-tailed kite was not observed on-site.

- **Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)** and **California horned lark (*Eremophila alpestris actia*)** were not observed on the project site during field surveys. These species are known from throughout the region and are likely to forage on the project site but are not expected to nest on the project site due to the lack of suitable nesting habitat. Neither species was observed on-site during biological resource field surveys.

- **Allen's hummingbird (*Selasphorus sasin*), Bullock's oriole (*Icterus bullockii*), California thrasher (*Toxostoma redivivum*), common yellowthroat (*Geothlypis trichas sinuosa*), Lawrence's goldfinch (*Carduelis lawrencei*), Nuttall's woodpecker (*Picoides nuttallii*)**, and **oak titmouse (*Baeolophus inornatus*)**are Birds of Conservation Concern and were also identified in the USFWS IPaC search. These do not have any formal protection under FESA or CESA. Although these species have a potential to be present, they were not observed on-site during the biological resource field surveys.

4.3.2.4 On-site Delineation

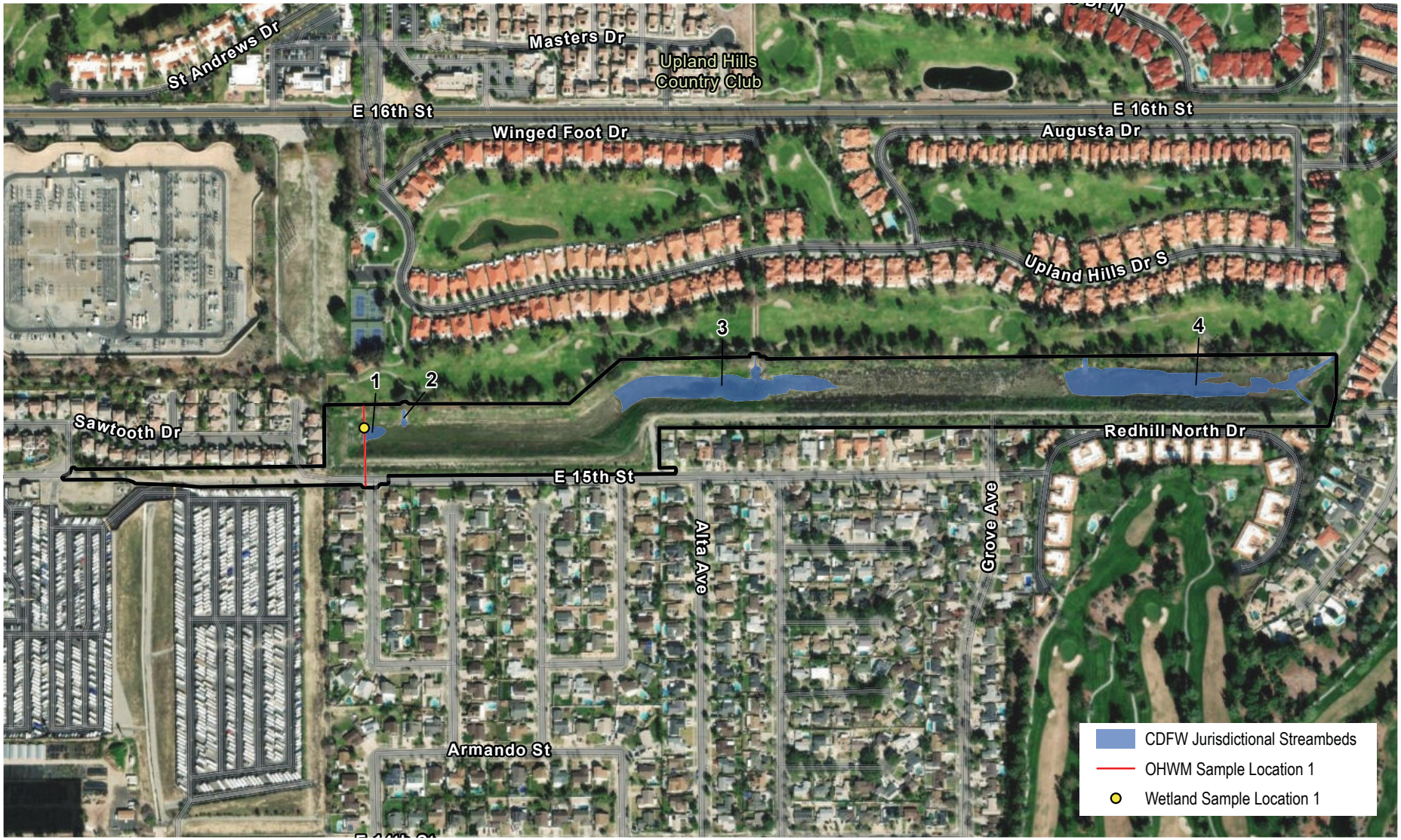
The assessment of jurisdictional wetlands, waters of the United States, waters of the State, and other jurisdictional habitats was conducted by June 24 and August 15, 2022 (Aspen Environmental). One category of jurisdictional feature, CDFW jurisdictional streambeds, was documented within the project site. Because the four, man-made features (see **Figure 4.3-3**) are ephemeral in nature and due to the general absence of downstream connectivity to traditional navigable waters, these features are not expected to fall under United States Army Corps of Engineers (USACE) jurisdiction.

Because these features are wholly man-made artificial stormwater management basins[3], they are not expected to fall under the jurisdiction of the Santa Ana Regional Water Quality Control Board.

Table 4.3.B summarizes the results of the project-specific delineation[4].

[3] As part of the Area-wide Urban Storm Water Runoff Management Program permitted by the Santa Ana Regional Water Quality Control Board (see page 4, Appendix D-4.)

[4] Per the California Gnatcatcher Habitat Assessment (see Appendix D-2), "…There was pooled water present and hydric vegetation at the base of the larger culvert" on the western portion of the basin.



LSA

LEGEND

- Project Site Boundary

FIGURE 4.3-3

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0 250 500

FEET

SOURCE: Aquatic Resources Delineation Report, Aspen Environmental, September 2023

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Villa Serena Specific Plan

Jurisdictional Resources

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Table 4.3.B: Jurisdictional Waters and Wetlands within the Project Site

Drainage	USACE Waters of the US		Santa Ana RWQCB Waters of the State		Data Sheet Number	Cowardin Classification	Dominant Vegetation	CDFW Jurisdictional Streambeds (acres)
	Area (acres)	Length (ft)	Area (acres)	Length (ft)				
1	-	-	-	-	Wetland 1 & OHWM 1	R4SB	Cattail Marsh	0.08
2	-	-	-	-	N/A	R4SB	Cattail Marsh	0.02
3	-	-	-	-	N/A	R4SB	Cattail Marsh	1.32
4	-	-	-	-	N/A	R4SB	Cattail Marsh	1.48
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2.9**

Source: *Aquatic Resources Delineation Report* (Aspen Environmental Group 2023)
CDFW = California Department of Fish and Wildlife
ft = feet
N/A = not applicable
OHWM = ordinary high water mark
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers

Drainage 1 is a small, isolated man-made drainage feature at the west end of the project site near a storm drain intake. Drainage 1 was mapped as a cattail-marsh CDFW streambed, dominated by species such as castor bean, jungle grass, umbrella sedges, and Dallis grass. At the time of the delineation, this drainage was completely dry but did have a defined ordinary high-water mark (OHWM). This drainage was not mapped as USACE "waters of the United States", as it appears to be ephemeral and conveys collected stormwater via sheet flow during storm events from immediately adjacent areas. Drainage 1 does not appear to receive flows from the eastern portion of the site. This drainage contains 0.08 acre of CDFW stream resources and is mapped as a freshwater emergent wetland in the National Wetlands Inventory.

Drainage 2 is small, incised isolated drainage feature just east of Drainage 1. Drainage 2 is mapped as a cattail marsh dominated by species such as marsh purslane, Spanish sunflower, and willow-herb and was mapped as a CDFW Streambed. It receives flows from a concrete-lined swale to the north of the drainage that receives runoff from the adjacent golf course. At the time of the survey, Drainage 2 had no surface water present, but the soil was wet. The drainage was approximately 2 feet lower than the surrounding basin floor, creating an OHWM; however, flows do not appear to fill Drainage 2 to the point of allowing surface connectivity with Drainage 1 to the west. This drainage contains 1.32 acres of CDFW streambed and is mapped as a freshwater emergent wetland in the National Wetlands Inventory.

Drainage 3 is an isolated drainage feature near the center of the project site. Drainage 3 is largely mapped as a cattail marsh dominated by species such as broadleaf cattail, water speedwell, common plantain, and annual sunflower and was mapped as a CDFW Streambed. It receives flows from two concrete-lined swales to the north that receive runoff from the adjacent golf course. At the time of the survey, Drainage 3 had no surface water present, but the soil was wet. An earthen berm that is present in the basin floor prevents flows from Drainage 3 from flowing west towards Drainages 1 and 2. The drainage contains 0.02 acre of stream resources and is primarily mapped as freshwater emergent wetland in the National Wetlands Inventory.

Drainage 4 is an isolated drainage feature at the east end of the project site. Drainage 4 is mapped as a cattail marsh dominated by species such as broadleaf cattail, water speedwell, spearmint, and annual sunflower and is mapped as a CDFW Streambed. It receives flows from three concrete-lined swales, one to the northeast, one to the southeast, and one to the north, each of which conveys runoff from the surrounding golf courses and residential development. At the time of the survey, Drainage 4 had no surface water present, but the soil was wet. High ground in the basin floor prevents flows from Drainage 4 to flow west towards Drainages 1, 2, and 3. No change to this drainage will take place during construction of the proposed residential uses or the modification of the basin. This feature is primarily mapped as freshwater emergent wetland in the National Wetlands Inventory.

4.3.2.5 Regulatory Framework

Policies and regulations that potentially apply to the biological resources associated with the proposed project are listed below. Any impacts that conflict with these policies and regulations could be considered significant under CEQA.

Federal Regulations. The following federal regulations would be applicable to the proposed project.

Section 404 of the Clean Water Act Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within "waters of the United States" and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. The CWA defines "waters of the United States" as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands". The CWA defines wetlands as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. The USACE has adopted several revisions to its regulations to clearly define "waters of the United States". Due to on-going changes in policy as of 2022, ephemeral drainages are treated as jurisdictional waters of the United States for the purposes of this analysis.

Porter Cologne Water Quality Control Act and Section 401 of the Clean Water Act. The Regional Water Quality Control Boards regulate activities affecting "waters of the State" according to the Porter Cologne Water Quality Control Act and Section 401 of the federal CWA. The Porter-Cologne Act defines waters of the State as all surface and subsurface waters. The RWQCBs may issue permits or may issue a waiver for a given application. The project site is within the jurisdictional boundaries of the Santa Ana RWQCB.

Section 401 of the CWA requires that any applicant for a federal permit for activities that involve a discharge to "waters of the State" shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal CWA. Therefore, before the USACE may issue a Section 404 permit, a permittee must apply for and receive a Section 401 Water Quality Certification from the RWQCB, Santa Ana Region. The RWQCB may add conditions to its certification to remove or mitigate potential impacts to water quality standards.

United States Endangered Species Act The USFWS, pursuant to FESA, protects endangered and threatened species. FESA defines an endangered species as a species in danger of extinction throughout all or a significant part of its range and a threatened species as one that is likely to become endangered in the foreseeable future. USFWS also identifies species proposed for listing as endangered or threatened. Other than for federal actions, there is no formal protection for candidate species under FESA. However, consultation with USFWS regarding species proposed for listing can prevent project delays that could occur if a species is listed prior to project completion.

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

Bald and Golden Eagle Protection Act The federal Bald and Golden Eagle Protection Act (BGEPA) prohibits the taking of bald and golden eagles. The BGEPA defines "take" to include "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing." The USFWS further defines "disturb" as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

State Regulations. The following State regulations would be applicable to the proposed project.

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

California Fish and Game Code – Section 1602 Section 1602 requires any person, State, or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially charge the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed Project. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW will determine if the proposed project may

impact fish or wildlife resources. If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be required. A completed CEQA document must be submitted to CDFW before a SAA will be issued.

California Endangered Species Act. The CDFW, through provisions of the California Administrative Code and policies formulated by the California Fish and Game Commission, regulates plant and animal species in danger of, or threatened with, extinction based on the list of endangered, threatened, and candidate species developed by the Fish and Game Commission. Endangered species are native species or subspecies of plants and animals that are in serious danger of becoming extinct throughout all or a significant part of their range. Threatened species are those species that, although not presently threatened with extinction, are likely to become endangered in the foreseeable future without special protection and management. Candidate species are species that the Fish and Game Commission has formally noticed as being under review for addition to the list of endangered or threatened species or as a species proposed for listing.

Lake and Streambed Alteration Program Sections 1600 et seq. of the California Fish and Game Code define the responsibilities of the CDFW and require public and private applicants to obtain an agreement for projects that would "… divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by the CDFW in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or would use material from the streambed designated by the department." CDFW wardens and/or unit biologists typically have the responsibility for formulating and issuing Streambed Alteration Agreements. The CDFW, through provisions of the Code (Sections 1601–1603), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW.

Local Regulations. The following local regulations would be applicable to the proposed project.

City of Upland General Plan. The City of Upland's General Plan is the guiding document for development within the City. the following goals, policies, and programs are identified in the City's General Plan and are relevant to resource conservation for the proposed project:

- **Goal OSC-1:** Upland's natural resources such as open space, wildlife and vegetation, are protected and enjoyed as limited and valuable resources and integral parts of a sustainable environment
    - **Policy OSC-1.1: Resource Preservation.** Preserve open space and habitat areas by promoting conservation and preservation easements that protect habitat areas, habitat corridors, and sensitive biological resources.
    - **Policy OSC-1.4: Regulatory Protection.** Ensure that new development meets all federal, State, and regional regulations for habitat and species protection.

- **Policy OSC-1.5: New Development.** Encourage new development to preserve on-site natural elements and incorporate low impact development techniques.

City of Upland Municipal Code. Section 12.24.100 of the Upland Municipal Code requires a permit for removal of any trees from parkways or parking strips. Additionally, Section 12.26 includes performance standards and regulations for the operations, planting, proper maintenance, removals, preservation, and protection of heritage trees in the City's right-of-way.

4.3.3 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to biological resources that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.3.3.1 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant impact related to biological resources if it would:

Threshold BIO-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 Wildlife or the United States Fish and Wildlife Service.

Threshold BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the United States Fish and Wildlife Service.

Threshold BIO-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.

Threshold BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

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

Threshold BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

4.3.3.2 Project Impacts

Threshold BIO-1: Candidate, Listed, Sensitive Status or Special-Status Species.

Plants. No federal- or State-listed or candidate, or special-status plant species are known to occur on the project site, and none were observed during the biological resource surveys. Although no special-status plants were observed on the project site during the biological resource surveys, suitable habitat for Parry's spineflower is on site, although the chances of germination on the project site is very low. Southern California black walnut and Robinson's pepper-grass, both with at least a moderate potential to occur on the project site, have no formal protection under CEQA. These species were not identified on-site.

In the absence of any listed, candidate, or sensitive plant species, development of the project would not have a substantial effect, either directly or through habitat modifications, on any plant species identified in local or regional plans, policies, or regulations, or by the CDFW and/or the USFWS; therefore, impacts to relative to such plant species are ***less than significant*** and no mitigation is warranted.

Wildlife. Although four listed and one candidate species have the potential to occupy the project site, no federal or State listed wildlife species are known to occur on the project site, and none were observed during the biological resource surveys.

- **California Gnatcatcher:** Focused biological surveys of the project were conducted on June 3 and July 1, 2022 and April 16, 2023. The habitat assessment determined that the site contains 0.9 acre of California buckwheat scrub on the south-facing slope north of and abutting East 15th Street in the western part of the site and an additional 8.8 acres of habitat in the eastern part of the site. Although the habitat assessment determined the site could be suitable for California gnatcatcher, due to certain habitat characteristics present on the site, the species would have a low potential to occur. These factors included (1) the site is a small, fragmented island of habitat that is surrounded by urban development, making discovery, colonization, and dispersal potentially difficult; and (2) the nearest known occurrence of California gnatcatcher is 5 miles northwest of the site, with no new records of the species occurring since 1999. Due to these conditions, and the absence of this species during the biological field surveys, project implementation would not have a substantial effect, either directly or through habitat modifications, on California gnatcatcher. Impacts to this species are ***less than significant*** and no mitigation is warranted.

- **Least Bell's Vireo:** This species is known to nest at the Cucamonga Basin, 0.7 mile north of the project site. Suitable riparian habitat for Least Bell's vireo is present on the project site; although, due to isolation and small size of this habitat, there is a low potential for the species to be present. This species was not observed on-site during biological resource field surveys. Impacts to this species are ***less than significant,*** and no mitigation is warranted.

- **Swainson's Hawk:** This species breeds in open habitats (e.g., grasslands.) Although the project site is well outside of the breeding range of this species, Swainson's hawks have been observed in the vicinity of the project site during migration. Although the species has a moderate potential to be present during migration, this species was not observed during on-

site biological resource surveys and does not exhibit the species' preferred open habitat for breeding; therefore, impacts to this species are ***less than significant,*** and no mitigation is required.

- **Tricolored Blackbird:** Although this species has been observed at Puddingstone Reservoir and the North Etiwanda Preserve, 9.3 and 6.8 miles from the site, respectively, it has not been observed on the project site. Within the conservation area, the project site provides a moderate and low potential for foraging and nesting, respectively. In the on-site absence of this species, impacts would be ***less than significant,*** and no mitigation is warranted.

- **Monarch (Butterfly):** Overwintering populations of monarch in California are a candidate for federal listing under the ESA. The listing would only protect these overwintering sites and not individual butterflies or their food plants. Monarch and their food plants are widespread in California and although milkweed was not seen on the project site, this species was observed on-site during early summer surveys in 2022. Winter roost sites extend along the coast from northern Mendocino County to Baja California, Mexico, and roosts are generally in wind-protected tree groves. The project site is likely too far inland to support winter roosting habitat; therefore, impacts to this species would be ***less than significant,*** and no mitigation is required.

Two special-status wildlife species (coastal whiptail and Cooper's hawk) were observed on-site or foraging over the project site during the biological resource field surveys.

- **Coastal Whiptail:** This species is a CDFW Species of Special Concern and impacts may be significant under CEQA. Coastal whiptail were observed at three locations within the project site and are expected to occur throughout the project site. Two of the observations were within areas of the proposed residential development, whereas one siting was within the area proposed for basin modifications. Implementation of the project would result in vegetation clearance and ground disturbance in these areas; therefore, impacts to this species are ***potentially significant*** and **Mitigation Measure BIO-1**, which requires relocation of the species should it be encountered during vegetation clearance and ground disturbing activities.

- **Cooper's Hawk:** This species is on a CDFW watch list species that has no formal protection and requires impact assessment under CEQA. If nesting on site, Cooper's hawks may be impacted during on-site vegetation and/or ground disturbance activities; therefore, impacts to this species are ***potentially significant*** and **Mitigation Measure BIO-2**, which requires the completion of pre-construction nesting bird surveys no more than 3 days prior to the start of project activities.

Suitable habitat for other special-status wildlife species is on-site; therefore, although these species were not observed on-site during biological resource field surveys, they have a potential to occur on-site.

- **Burrowing Owl:** Burrowing owls are periodically observed in the Inland Empire with the highest local concentrations near Ontario, approximately 5 miles southeast of the project

site. Suitable burrowing owl burrows are present on the project site but are limited. The habitat at the project site is marginally suitable for this species, but with a sufficient prey base and an abundant ground squirrel population (for producing burrows), there is a moderate potential for breeding or wintering burrowing owls to be present on the site. It is possible the site may be occupied by this species prior to project implementation. Impacts associated with any vegetation removal and/or ground disturbance of areas occupied by this species would be ***potentially significant*** and **Mitigation Measure BIO-3**, which requires the completion of burrowing owl services, is warranted.

Other special-status species have a low moderate potential to occupy the project site have not been observed on-site during biological resource surveys. Should these species occupy the site prior to project implementation, vegetation and ground disturbance may potentially impact nesting and/or foraging activities. Implementation of **Mitigation Measure BIO-2** is required to address this ***potentially significant*** impact.

Mitigation Measure BIO-1 **Coastal Whiptail.** To mitigate potential impacts to coastal whiptail, the project applicant shall retain a CDFW approved qualified biologist to be present during initial project vegetation clearing and soil disturbance activities. In the event this species is observed during ground disturbance, the project biologist shall halt work in the vicinity of the find until such time relocation activities are complete.

The qualified biologist shall be appropriately equipped to capture present coastal whiptail and any other special-status species from areas of ground disturbance and will relocate them from the area of disturbance to the conservation area at the eastern end of the basin. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety.

Mitigation Measure BIO-2 **Nesting Birds.** A pre-construction nesting survey shall be conducted by a CDFW approved qualified biologist at the appropriate time of day/night, during appropriate weather conditions, no more than **3 days prior to the initiation of project activities**. Surveys shall encompass all suitable areas including trees, shrubs, bare ground, burrows, cavities, and structures. Survey duration shall take into consideration the size of the property; density, and complexity of the habitat; number of survey participants; survey techniques employed; and shall be sufficient to ensure the data collected is complete and accurate. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior (e.g., copulation, carrying of food or nest materials, nest building, removal of fecal sacks, flushing

suddenly from atypically close range, agitation, aggressive interactions, feigning injury or distraction displays, or other behaviors). If a nest is suspected, but not confirmed, the qualified biologist shall establish a disturbance-free buffer until additional surveys can be completed, or until the location can be inferred based on observations. The qualified biologist shall not risk failure of the nest to determine the exact location or status and will make every effort to limit the nest to potential predation as a result of the survey/monitoring efforts (e.g., limit number of surveyors, limit time spent at/near the nest, scan the site for potential nest predators before approaching, immediately depart nest area if indicators of stress or agitation are displayed). If a nest is observed, but thought to be inactive, the qualified biologist shall monitor the nest for 1 hour (4 hours for raptors during the non-breeding season) prior to approaching the nest to determine status. The qualified biologist shall use their best professional judgement regarding the monitoring period and whether approaching the nest is appropriate.

In the event an active nest is confirmed, the qualified biologist shall immediately establish a conservative buffer surrounding the nest based on their best professional judgement and experience. The buffer shall be delineated to ensure that its location is known by all persons working within the vicinity but shall not be marked in such a manner that it attracts predators. Once the buffer is established, the qualified biologist shall document baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance. Following documentation of baseline conditions, the qualified biologist may choose to adjust the buffer based on site characteristics, stage of reproduction, and types of Project activities proposed at/near that location. The qualified biologist(s) shall monitor the nest at the onset of project activities, and at the onset of any changes in project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the qualified biologist determines that project activities may be causing an adverse reaction, the qualified biologist shall be empowered to adjust the buffer accordingly.

The qualified biologist(s) shall be onsite daily to monitor all existing nests, the efficacy of established buffers, and to document any new nesting occurrences. The qualified biologist

shall document the status of all existing nests, including the stage of reproduction and the expected fledge date. If a nest is suspected to have been abandoned or failed, the qualified biologist shall monitor the nest for a minimum of 1 hour (4 hours for raptors), uninterrupted, during favorable field conditions. If no activity is observed during that time, the qualified biologist may approach the nest to assess the status.

Under the direction of the qualified biologist, activities to discourage nesting on the project site, including moving equipment and materials daily, covering material with tarps or fabric, and securing all open pipes and construction materials, shall be permitted. The qualified biologist shall ensure that none of the materials used pose an entanglement risk to birds or other species.

As established under any agreement between the Applicant and the CDFW, the qualified biologist shall prepare summary reports regarding nesting species identified onsite, discovery of any of new nests, the status/outcome of any previously identified nest, buffer distances established for each nest, and any adjustments made to established buffers. The CDFW shall be notified within 24 hours of Project activities result in the abandonment of, or damage to a nest.

Mitigation Measure BIO-3

Burrowing Owl. A burrowing owl pre-construction survey shall be conducted by a CDFW approved qualified biologist at the appropriate time of day/dawn, during appropriate weather conditions, **no more than 14 calendar days prior to the initiation of project activities.** The survey shall include inspection of all burrows that exhibit typical characteristics of owl activity such as owls themselves, burrows, and owl sign at burrow entrances, including pellets, feces or other "ornamentation", feathers, prey remains, whitewash, etc. Survey duration shall take into consideration the size of the property; density and complexity of the habitat; number of survey participants; survey techniques employed; and shall be sufficient to ensure the data collected is complete and accurate.

In the event an active or occupied burrow is confirmed, the qualified biologist shall immediately establish a conservative buffer surrounding the burrow based on their best professional judgement and experience. The buffer shall be delineated to ensure that its location is known by all persons working within the vicinity but shall not be marked in such a manner that it

attracts predators. Once the buffer is established, the qualified biologist shall document baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance. Following documentation of baseline conditions, the qualified biologist may choose to make adjustments to the buffer based on site characteristics, stage of reproduction, and types of project activities proposed at/near that location. The qualified biologist shall monitor the burrow at the onset of project activities and at the onset of any changes in project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the qualified biologist determines that Project activities may be causing an adverse reaction, the qualified biologist shall be empowered to adjust the buffer accordingly.

In the event burrowing owls are detected on or adjacent to the Project site and cannot be completely avoided, a Burrowing Owl Mitigation and Monitoring Plan shall be submitted to CDFW for review and approval prior to disturbance of the owl(s). The Burrowing Owl Mitigation and Monitoring Plan shall include the number and location of occupied burrow sites that will be disturbed by the project; proposed relocation, monitoring, and minimization actions; and details on adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation of artificial burrows (numbers, location, and type of burrows) shall be identified in the Burrowing Owl Mitigation and Monitoring Plan. The Burrowing Owl Mitigation and Monitoring Plan shall also include an impact analysis consistent with the 2012 *Staff Report on Burrowing Owl Mitigation* and shall identify mitigation including acquisition, permanent protection, and funding of mitigation lands for the loss of burrowing owl habitat. The applicant shall implement the Burrowing Owl Mitigation and Monitoring Plan following CDFW review and approval.

Implementation of the stated mitigation measures will reduce impacts to special-status wildlife species to a **less than significant** level.

Threshold BIO-2: Riparian Habitat or Sensitive Natural Community. Per the focused California gnatcatcher survey (see Appendix D-2), narrow strips of riparian vegetation are on the northern and southern edges of the conservation areas within the eastern portion of the basin. As project activities would be prohibited in this area, no change in the extent or condition of these riparian

areas would result from implementation of the project; therefore, impacts to on-site riparian areas would be ***less than significant*** and no mitigation is warranted.

As previously discussed in Section 4.3.2.1, a total of 0.14 acre of scale broom scrub is within the area planned for residential development. The scale broom scrub is limited to the north-facing basin slope and provides limited habitat value. As this vegetation type is designated a sensitive natural community, its removal would be a ***significant impact***.

The development of the project (including basin modification) would permanently alter natural conditions within 9.16 acres proposed for residential development. Ground disturbance would further temporarily affect natural conditions within the area of the modified basin. Based on a preliminary SAA developed between the project Applicant (the CDFW Permittee) and the CDFW, the adverse effects on fish and wildlife resources include loss of bed or bank, change in contour of channel, soil compaction, short- and long- term release of contaminants from concrete, loss of foraging habitat, loss of riparian habitat, disruption to nesting birds and other wildlife, disruption to wildlife movement, and temporary impacts to water quality. Drainages 1 through 3 are in areas that would be filled and/or otherwise disturbed for the development of residential uses and/or during the proposed basin modification. Drainage 4 is within the conservation area at the eastern portion of the project site and would be unaffected by project activities. As presented in Section 4.3.2.4 and **Table 4.3.B**, pursuant to Section 1602 of the California Fish and Game Code and through development of the SAA, the CDFW has identified that development of the proposed project would impact 1.44 acres of Section 1602 stream resources in the western portion of the basin. The project's effect on stream resources is a ***significant impact*** requiring mitigation.

Mitigation Measure BIO-4 **Streambed Alternation Agreement.** Prior to the commencement of ground disturbance, the project applicant (the CDFW permittee) shall provide evidence to the City and the CDFW that applicable provisions outlined in the final Streambed Alteration Agreement have been appropriately satisfied.

Pursuant to the SAA, impacts to CDFW stream resources will be mitigated through either **Mitigation Measure BIO-5** or **BIO-6**, which require implementation of a CDFW approved Habitat Mitigation Monitoring Plan and payment of required _credits in an approved mitigation bank, respectively**.**

Mitigation Measure BIO-5 **Habitat Mitigation and Monitoring Plan.** Within 3 months of project completion, the applicant or the City (as determined by CDFW) shall implement the CDFW approved Habitat Mitigation and Monitoring Program (HMMP) to create 1.2 acres of mule fat scrub and to enhance 0.3 acre of wetland within 1.5 acres at the far eastern portion of the basin (the "conservation area" or "mitigation area"). This area shall be maintained and managed to improve habitat quality and shall meet the success criteria established in the CDFW approved HMMP. As designated by the CDFW, the City, or the applicant (CDFW permittee) shall report on the results of the maintenance and monitoring of the mitigation area pursuant to the terms of the Streambed Alteration Agreement.

Mitigation Measure BIO-6 **Purchase of Mitigation Bank Credits**. No later than 30 days prior to the initiation of project activities, the applicant (CDFW Permittee) shall provide evidence to the City and CDFW that the 1.5 acres of streambed enhancement credits have been purchased from CDFW approved mitigation bank(s). The applicant (CDFW Permittee) shall obtain CDFW approval regarding the choice of the mitigation bank prior to credit purchase.

Implementation of the aforementioned Mitigation Measures will reduce potential impacts to sensitive natural communities to a less than significant level.

Threshold BIO-3: State or Federally Protected Wetlands. As referenced in Section 4.3.2.4, the four, man-made features are ephemeral in nature and, due to the general absence of downstream connectivity to traditional navigable waters, these features are not expected to fall under USACE jurisdiction. Because these features are wholly man-made artificial stormwater management basins[5], they are not expected to fall under the jurisdiction of the Santa Ana RWQCB.

Drainages 1 through 3 are in areas that would be filled and/or otherwise disturbed for the development of residential uses and/or during the proposed basin modification. Drainage 4 is within the conservation area at the eastern portion of the project site and would be unaffected by project activities. As presented in Section 4.3.2.4 and **Table 4.3.B**, pursuant to Section 1602 of the California Fish and Game Code and through development of the SAA, the CDFW has identified that development of the proposed project would impact 1.44 acres of Section 1602 stream resources. The project's effect on stream resources is a ***significant impact*** requiring mitigation.

Mitigation Measure BIO-5 or **BIO-6** require implementation of a Habitat Mitigation and Monitoring Plan or purchase of mitigation credits from a CDFW approved mitigation bank, respectively. Implementation of either measure would reduce potential impacts to State or federally protected wetlands to a less than significant level.

Threshold BIO-4: Wildlife Movement or Nursery Sites. Habitat fragmentation occurs when a single, contiguous habitat area is divided into two or more areas, or where an action isolates two or more new areas from each other. Isolation of habitat occurs when wildlife cannot move freely from one portion of the habitat to another or to/from one habitat type to another. Habitat fragmentation may occur when a portion of one or more habitats is converted into another habitat, as when scrub habitats are converted into annual grassland habitat because of frequent burning. Wildlife movement includes seasonal migration along corridors, as well as daily movements for foraging. Examples of migration corridors may include areas of unobstructed movement for deer, riparian corridors providing cover for migrating birds, routes between breeding waters and upland habitat for amphibians, and between roosting and feeding areas for birds.

The California Essential Habitat Connectivity Project, commissioned in 2010 by the CDFW and the California department of Transportation (Caltrans), created the Essential Connectivity Map, which

[5] As part of the area-wide Urban Storm Water Runoff Management Program permitted by the Santa Ana Regional Water Quality Control Board (see page 4, Appendix D-4).

depicts large, relatively natural habitat blocks that support native biodiversity and areas essential for ecological connectivity between them. The map does not reflect the needs of a particular species but is based on local and regional needs for connectivity. The project site is not located within any identified Essential Habitat Connectivity areas or Natural Landscape Blocks. The project site is more likely to support more localized movement with the region, with some species such as coyotes occupying the project site and radiating out into the adjacent development to forage. The project site is currently surrounded on all sides by urban/suburban development, and golf course landscapes with little to no areas that may provide connectivity to other habitat, if any, in the region.

As discussed in Section 4.3.2.3, although monarchs are widespread in California, the project site does not contain milkweed plants. The project site is too far inland to support winter roosting habitat for the monarchs. Nesting or foraging birds and burrowing owls may sometimes occur through the project site. As discussed under Threshold BIO-2, implementation **of Mitigation Measures BIO-2** and **BIO-3** would reduce impacts to burrowing owls and nesting birds to a less than significant level.

Threshold BIO-5: Local Policies and Ordinances. Upland Municipal Code Section 12.24.100 prohibits tree removal within the City without a permit from the City Manager. The northern border of the project site contains a row of non-native trees that encroach onto the site from the adjacent golf course. Any trees to be removed during construction of the Project would occur in accordance with Section 12.24.100 of the City Municipal Code. Additionally, all street tree plantings would occur pursuant to City Municipal Code Chapter 12.26 to ensure that project implementation will not conflict with the City's policies and ordinances protecting biological resources, including any tree preservation policy or ordinance. Impacts would be **less than significant**, and no mitigation is required.

Threshold BIO-6: Habitat Conservation Plans. The City of Upland, and therefore the project site, is not located within the jurisdiction of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.[6] Therefore, **no impact** would occur and no mitigation is warranted.

4.3.3.3 Cumulative Impacts

According to Section 15130 of the *State CEQA Guidelines*, cumulative impacts refer to incremental effects of an individual project when viewed in connection with the effects of past projects, current projects, and probable future projects. Due to the proposed project's historic and ongoing disturbance, proximity to development, few sensitive biological resources, and through compliance with local ordinances, project impacts would not result in significant cumulative effects on biological resources.

Project construction will contribute to the incremental loss of scale broom scrub in the region, including potential habitat for some special-status species. Cumulative impacts potentially include

[6] City of Upland. 2015b. *Section 8.0 Effects Found Not To Be Significant. City of Upland General Plan Final Program Environmental Impact Report*. September.

habitat fragmentation, increased edge effects, reduced habitat quality, and increased wildlife mortality. Federal, State, and local guidance provide a comprehensive approach to the regional conservation of sensitive habitat and covered species. Project compliance and consistency with USFWS, CDFW, and local regulations regarding biological resources ensure that any cumulative impacts to covered species are effectively mitigated. The implementation of previously identified mitigation measures would mitigate potential impacts to sensitive habitat and species that occur on the project site, therefore complying with habitat and species protection directed by the USFWS and CDFW.

A Streambed Alteration Agreement will be issued by the CDFW due to potential significant impacts to jurisdictional waters on the project site. As required by Mitigation Measures BIO-5 or BIO-6, preparation of a HMMP or payment of mitigation credits will be required to reduce impacts to wetlands to a less-than-significant level.

Focused biological resource studies have been conducted to assess potential impacts associated with development of the proposed uses. As outlined in Section 4.3.3, potential impacts on plant communities, sensitive wildlife species, habitat fragmentation, wildlife movement, habitat conservation plans, or local ordinances or regulations protecting biological resources are considered less than cumulatively significant.

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4.4 GREENHOUSE GAS EMISSIONS

This section summarizes existing greenhouse gas (GHG) emissions and discusses global climate change, its causes, and the contribution of human activities. This section also estimates the likely GHG emissions that would result from construction and operational activities associated with development of the proposed project, including vehicular traffic, energy consumption, and other emission sources. This section summarizes information provided in the Air Quality and Greenhouse Gas Assessment[1] prepared for the proposed project, which is included in Appendix C.

4.4.1 Setting

The following section describes existing GHG emissions in Upland, beginning with typical GHG types and sources, impacts of global climate change, the regulatory framework surrounding these issues, and current emission levels.

4.4.1.1 Background

The following section provides background information on GHGs and global climate change.

Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ±0.2 degree Celsius or 1.1 ±0.4 degrees Fahrenheit in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[2] GHGs are present in the atmosphere naturally, are released by natural sources, or form from secondary reactions taking place in the atmosphere. The following gases are widely seen as the principal contributors to human-induced global climate change:

- CO_2
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While

1 Urban Crossroads. 2023. Villa Serena Specific Plan Air Quality & Greenhouse Gas Assessment. June 27.

2 The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, GHGs like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of GHG results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

man-made GHGs include naturally occurring GHGs such as CO_2, CH_4, and N_2O, some gases, such as HFCs, PFCs, and SF_6, are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively only to the six gases listed above.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, which is the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by 1 unit mass of the GHG to the ratio of heat trapped by 1 unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). **Table 4.4.A** shows the GWP for each type of GHG. For example, sulfur hexafluoride is 23,900 times more potent at contributing to global warming than carbon dioxide.

Table 4.4.A: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO_2)	50–200	1
Methane (CH_4)	12	21
Nitrous Oxide (N_2O)	114	310
Hydrofluorocarbons (HFCs)		
HFC-32	270	11,700
HFC-134a	14	140
HFC-152a	1.4	140
Perfluorocarbons (PFCs)		
Tetrafluoromethane (CF_4)	50,000	6,500
Hexafluoromethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: *Final Update to the Climate Change Scoping Plan: Building on the Framework* (California Air Resources Board, 2017). Website: www.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents (accessed January 2023).

The following summarizes the characteristics of the six GHGs and black carbon. Black carbon also contributes to climate change and is therefore discussed below.

Carbon Dioxide. In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants, volcanic out gassing, decomposition of organic matter, and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral

production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

In 2020, total annual CO_2 accounted for approximately 80.2 percent of California's overall GHG emissions.[3] Transportation is the single largest source of CO_2 in California, which is primarily comprised of on-road travel. Electricity production, industrial, and residential sources also make important contributions to CO_2 emissions in California.

Methane. CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation in dairy cows, manure management, and rice cultivation are also significant sources of CH_4 in California. Total annual emissions of CH_4 accounted for approximately 10.5 percent of GHG emissions in California in 2020.

Nitrous Oxide. N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O emissions accounted for approximately 3.5 percent of GHG emissions in California in 2020.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[4] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry has resulted in greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 5.5 percent of GHG emissions in California in 2020.[5]

Black Carbon. Black carbon is the most strongly light-absorbing component of particulate matter (PM) formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is

[3] California Air Resources Board (CARB). n.d.-a. GHGs Descriptions & Sources in California. Website: https://ww2.arb.ca.gov/ghg-descriptions-sources (accessed January 2023).

[4] The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

[5] CARB. n.d.-a. GHGs Descriptions & Sources in California. Website: https://ww2.arb.ca.gov/ghg-descriptions-sources (accessed January 2023).

emitted directly into the atmosphere in the form of particulate matter less than 2.5 microns in size ($PM_{2.5}$) and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb 1 million times more energy than CO_2.[6] Black carbon contributes to climate change both directly (e.g., absorbing sunlight) and indirectly (e.g., affecting cloud formation). However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global warming.

Most United States emissions of black carbon come from mobile sources (52 percent), particularly from diesel-fueled vehicles.[7] The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The California Air Resources Board (CARB) estimates that the annual black carbon emissions in California will be reduced approximately 50 percent below 2013 levels by 2030.[8]

Effects of Global Climate Change. Effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global climate change may also result in impacts to local air quality from increased ground-level ozone (O_3) and PM.[9]

Additionally, according to the 2006 California Climate Action Team (CAT) Report,[10] the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC) and summarized in **Table 4.4.B**, can be expected in California over the course of the next century:

- The loss of sea ice and mountain snowpack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures[11]

6 United States Environmental Protection Agency (EPA). 2016. Black Carbon, Basic Information. November 29. Website: https://www3.epa.gov/airquality/blackcarbon/basic.html (accessed January 2023).

7 Ibid.

8 California Air Resources Board (CARB). 2017. *Short-Lived Climate Pollutant Reduction Strategy.* March. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf (accessed January 2023).

9 United States Environmental Protection Agency (EPA). 2022. Air Quality and Climate Change Research. November 8. Website: https://www.epa.gov/air-research/air-quality-and-climate-change-research (accessed January 2023).

10 California Environmental Protection Agency (CalEPA). 2010. *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. December.

11 Ibid.

Table 4.4.B: Potential Impacts of Global Warming and Expected Consequences for California

Potential Water Resource Impacts	Anticipated Consequences Statewide
Reduction of the State's average annual snowpack	• The decline of the Sierra snowpack would lead to a loss in half of the surface water storage in California by 70% to 90% over the next 100 years • Potential loss of 5 million acre-feet or more of average annual water storage in the State's snowpack • Increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply • Higher surface evaporation rates with a corresponding increase in tropospheric water vapor
Rise in average sea level	• Potential economic impacts related to coastal tourism, commercial fisheries, coastal agriculture, and ports • Increased risk of flooding, coastal erosion along the State's coastline, seawater intrusion into the Sacramento-San Joaquin River Delta (Delta) and levee systems
Changes in weather	• Changes in precipitation, ocean salinity, and wind patterns • Increased likelihood for extreme weather events, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones
Changes in the timing, intensity, location, amount, and variability of precipitation	• Potential increased storm intensity and increased potential for flooding • Possible increased potential for droughts • Long-term changes in vegetation and increased incidence of wildfires • Changes in the intensity and timing of runoff • Possible increased incidence of flooding and increased sedimentation • Sea level rise and inundation of coastal marshes and estuaries • Increased salinity intrusion into the Delta • Increased potential for Delta levee failure • Increased potential for salinity intrusion into coastal aquifers (groundwater) • Increased potential for flooding near the mouths of rivers due to backwater effects
Increased water temperatures	• Increased environmental water demand for temperature control • Possible increased problems with foreign invasive species in aquatic ecosystems • Potential adverse changes in water quality, including the reduction of dissolved oxygen levels • Possible critical effects on listed and endangered aquatic species
Changes in urban and agricultural water demand	• Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O_3 formation	• Increased temperatures • Potential health effects, including adverse impacts to respiratory systems

Source: *Environmental Water Account Draft Supplemental EIS/EIR to the Environmental Water Account Final EIS/EIR, Bureau of Reclamation Mid-Pacific Region*, Sacramento, California (Bureau of Reclamation. 2020).
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
O_3 = ozone

- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets[12]

- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones[13]

- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years[14]

- Increase in the number of days conducive to O_3 formation by 25 to 85 percent (depending on the future temperature scenario) in high O_3 areas of Los Angeles and the San Joaquin Valley by the end of the 21st century[15]

- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level[16]

Emission Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emission inventories.

Global Emissions. Worldwide emissions of GHGs in 2018 totaled 25.6 billion metric tons (MT) of CO_2e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.[17]

United States Emissions. In 2020, the year for which the most recent data are available, the United States emitted about 5,222 million metric tons of CO_2e (MMT CO_2e). Overall, emissions in 2020 decreased by 11 percent since 2019 and were 21 percent lower than 2005 levels. The primary driver for the decrease was an 11 percent decrease in CO_2 emissions from fossil fuel combustion. This decrease was primarily due to a 13 percent decrease in transportation emissions driven by decreased demand due to the COVID-19 pandemic. Electric power sector emissions also decreased 10 percent, reflecting both a slight decrease in demand from the COVID-19 pandemic and a continued shift from coal to less carbon intensive natural gas and

12 California Environmental Protection Agency (CalEPA). 2010. *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. December.

13 Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. February. Website: https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf (accessed January 2023).

14 CalEPA. 2010. *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. December.

15 Ibid.

16 Ibid.

17 United Nations Framework Convention on Climate Change (UNFCCC). n.d. GHG Data from UNFCCC. Website: unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc (accessed January 2023).

renewables. Of the five major sectors (residential and commercial, agricultural, industry, transportation, and electricity generation) transportation accounted for the highest amount of GHG emissions in 2020 (approximately 27 percent), with electricity generation second at 27 percent and emissions from industry third at 24 percent.[18]

State of California Emissions. The State emitted approximately 369.2 MMT CO_2e emissions in 2020, which are 35.3 MMT CO_2e lower than 2019 levels and 61.8 MMT CO_2e below the 2020 GHG limit of 431 MMT CO_2e.[19] The CARB estimates that transportation was the source of approximately 37 percent of the State's GHG emissions in 2020, which is a smaller share than recent years because the transportation sector saw a significant decrease of 26.6 MMT CO_2e in 2020, likely due in large part to the impact of the COVID-19 pandemic. The next largest sources included industrial sources at approximately 20 percent and electricity generation at 16 percent. The remaining sources of GHG emissions were commercial and residential activities at 10 percent, agriculture at 9 percent, high GWP at 6 percent, and waste at 2 percent.[20]

4.4.1.2 Regulatory Setting

This section describes applicable regulations related to GHG emissions at the federal, State, regional, and local level.

Federal Regulations. The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the United States Environmental Protection Agency (EPA) has the authority to regulate CO_2 emissions under the Federal Clean Air Act (FCAA). While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change. This includes the 2009 EPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the EPA Administrator signed an endangerment finding action in 2009 under the FCAA, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

In October 2012, the EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the United States Department of Transportation (USDOT), issued final rules to further reduce GHG emissions and improve Corporate Average Fuel Economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond. The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel

18 United States Environmental Protection Agency (EPA). 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020. April 19. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks (accessed May 2023).

19 California Air Resources Board (CARB). 2022a. *California Greenhouse Gas Emissions for 2000 to 2020, Trends of Emissions and Other Indicators*. October 26. Website: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf (accessed January 2023).

20 Ibid.

economy to the equivalent of 54.5 miles per gallon (mpg), limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025.

On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gasoline between model years 2030 to 2050.

State Regulations. CARB is the lead agency for implementing climate change regulations in the State. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002) In response to the transportation sector's significant contribution to California CO_2 emissions, Assembly Bill (AB) 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles and light-duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) that were manufactured in 2009 as well as all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of Clean Air Act Preemption was not granted by the EPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025. The Trump administration revoked California's waiver in 2019, but the Biden administration restored California's waiver in 2021.

Executive Order S-3-05 (2005). Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, EO S-3-05 established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010.
- GHG emissions should be reduced to 1990 levels by 2020.
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate the efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads this CAT made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate

Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in EO S-3-05 and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and State Legislature was released in March 2006, and it laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in EO S-3-05. The most recent report was released in December 2020.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is AB 32, which was passed by the State Legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 MMT CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008 and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT CO_2e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e)
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e)
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e)
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e)

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA-equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB has not yet determined what amount of GHG reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, the CARB is also developing an additional protocol for community emissions). The CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5 MMT CO_2e reduction due to implementation of Senate Bill (SB) 375.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the CARB and CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed EO S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard (LCFS). EO S-1-07 sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the LCFS as a discrete early action measure. In 2011, United States District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the LCFS, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeals stayed the District Court's injunction, allowing implementation of the LCFS. The Ninth Circuit decided to uphold the LCFS.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (i.e., LCFS, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[21] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, which is the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT.[22]

The CARB approved the First Update to the Climate Change Scoping Plan (First Update) on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020 and also sets the groundwork to reach long-term goals set forth in EO S-3-05 and EO B-16-2012. The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission

21 California Air Resources Board (CARB). 2007a. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

22 California Air Resources Board (CARB). 2007b. "ARB approves tripling of early action measures required under AB 32," News Release 07-46. October 25.

reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[23] to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

The 2022 Scoping Plan[24] was approved in December 2022 and assesses progress toward achieving the SB 32 2030 target and laying out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code [PRC] Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the *CEQA Guidelines* in November 2018, which went into effect in December 2018. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008). SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organizations (MPOs); the targets require a 6 to 15 percent reduction by 2020 and between 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs will work with local jurisdictions in the development of a Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the Los Angeles/Southern California reduction targets

23 California Air Resources Board (CARB). 2017a. *California's 2017 Climate Change Scoping Plan*. November.

24 California Air Resources Board (CARB). 2022a. *2022 Scoping Plan for Achieving Carbon Neutrality*. November 16. Website: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf (accessed January 2023).

for per capita vehicular emissions were 8 percent by 2020 and are 19 percent by 2035 as shown in **Table 4.4.C**.

Table 4.4.C: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (%)	By 2035 (%)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6–13	13–16
Los Angeles/Southern California	8	19

Source: Scoping Plan for Achieving Carbon Neutrality (California Air Resources Board 2022a).

Executive Order B-30-15 (2015). Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. The CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target and therefore is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015), Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent
- Increasing energy efficiency in buildings by 50 percent by the year 2030

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission for the private utilities and by the California Energy Commission for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In the summer of 2016, the Legislature passed, and the Governor signed, SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in

Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps California on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million (ppm) CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32 (i.e., AB 197) provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by the CARB was posted in December 2016.

Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's Renewables Portfolio Standard requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. SB 100 also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under SB 100, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs the CARB to work with relevant State agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Standards Code and CALGreen Code. The California Building Standards Code, or Title 24 of the California Code of Regulations (CCR), contains the regulations that govern the construction of buildings in California. Within the Building Standards Code, two parts pertain to the incorporation of both energy efficient and green building elements into land use development. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. The California Building Standards Commission established the California Green Building Standards Code (CALGreen Code), which sets performance standards for residential and non-residential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is updated every 3 years and was most recently updated in 2019 to include new mandatory measures for residential as well as non-residential uses (the new measures took effect on January 1, 2020). The next set of standards were adopted in 2022 and will apply to projects seeking building permits on or after January 1, 2023. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Cap and Trade. The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by the CARB took effect on January 1, 2012, with enforceable compliance obligations beginning on January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through 2020, the cap has been declining approximately 3 percent annually. The CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligations began for distributors of transportation fuels, natural gas, and other fuels. The cap-and-trade program was initially slated to sunset in 2020, but the passage of SB 398 in 2017 extended the program through 2030.[25]

Executive Order N-79-20. EO N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

Regional Regulations. Regional regulations that are applicable to GHG emissions generated by the proposed project are implemented by the Southern California Association of Governments (SCAG), the South Coast Air Quality Management District (SCAQMD), and San Bernardino County Transportation Authority (SBCTA).

Southern California Association of Governments. SCAG is a regional council consisting of six Southern California counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and more than 38,000 square miles within Southern California. SCAG is the MPO serving the region under federal law and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law. As the Regional Transportation Planning Agency, SCAG prepares long-range transportation plans for the Southern California region, including the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the 2008 Regional Comprehensive Plan.

[25] California Air Resources Board (CARB). 2023. Cap-and-Trade Program. Website: www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed January 2023).

On September 3, 2020, SCAG adopted Connect SoCal – The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (2020–2045 RTP/SCS).[26] In general, the SCS outlines a development pattern for the region, which when integrated with the transportation network and other transportation measures and policies would reduce vehicle miles traveled (VMT) from automobiles and light-duty trucks, thereby reducing GHG emissions from these sources. For the SCAG region, the CARB has set GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 19 percent below 2005 per capita emissions levels by 2035. The RTP/SCS lays out a strategy for the region to meet these targets. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.[27] However, the SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

South Coast Air Quality Management District. In 2008, the SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the SCAQMD 2008 draft guidance document titled *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*[28] that could be applied by lead agencies. On September 28, 2010, SCAQMD Working Group Meeting No. 15 provided further guidance, including a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. SCAQMD has not presented a finalized version of these thresholds to the governing board.

SCAQMD identifies the emissions level for which a project would not be expected to substantially conflict with any State legislation adopted to reduce statewide GHG emissions. As such, the utilization of a service population represents the rates of emissions needed to achieve a fair share of the State's mandated emissions reductions. Overall, the SCAQMD identifies a GHG efficiency level that, when applied statewide or to a defined geographic area, would meet the post-2020 emissions targets as required by AB 32 and SB 32. If projects are able to achieve targeted rates of emissions per the service population, the State will be able to accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and future post-2020 targets.

San Bernardino County Transportation Authority Regional GHG Reduction Plan. In response to the State initiatives in limiting GHG emissions as mentioned in Section 4.4.4.2, SBCTA and other

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26 Southern California Association of Governments (SCAG). 2020. *Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*. September 3. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176 (accessed January 2023).

27 Ibid.

28 South Coast Air Quality Management District (SCAQMD). 2008. *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*. Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds (accessed January 2023).

regional partners compiled a GHG emissions inventory and an evaluation of reduction measures that could be adopted by the 25 partnership cities of San Bernardino County. The latest Reduction Plan (2021) notes in the City Profile chapter for Upland that the City of Upland (City) selected a goal to reduce its community GHG emissions to a level that is 40 percent below its 2016 GHG emissions level by 2030.[29] The City profile also identifies the adopted emission reduction strategies, reduction measures, and relevant General Plan Policies.

City of Upland General Plan and Climate Action Plan. The City of Upland addresses GHG in the Open Space and Conservation Element of the City's General Plan. The Open Space and Conservation Element contains goals, policies, and implementing actions that work toward achieving an environmentally aware community that is responsive to changing climate conditions and actively seeks to reduce local GHG emissions. The following goals, policies, and implementing actions related to GHG are presented in the Open Space and Conservation Element[30] and are applicable to the proposed Project:

> **Policy OSC-5.2:** Reduce greenhouse gas emissions from new development by promoting water conservation and recycling; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions.
>
> **Policy OSC-5.4:** Evaluate greenhouse gas emission impacts from proposed development projects as required by the California Environmental Quality Act.
>
> **Policy OSC-5.5:** Require development projects that exceed AQMD ROG and NOX operational thresholds to incorporate design or operational features that reduce emissions equal to 15% from the level that would be produced by an unmitigated project.
>
> **Policy OSC-5.11:** Require new development to comply with the California Green Building Code (CALGreen) adopted by the California Building Standards Commission at the time of building permit application.

The City, as part of the General Plan 2035 update, also prepared a CAP[31] that provides a framework of strategies and actions to reach GHG emissions targets consistent with the State of California's reduction targets. The CAP also describes Upland's emissions sources, provides projections of future emissions, includes best practices for addressing climate change impacts, and provides recommendations for measuring progress. The CAP focuses on addressing the largest GHG

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29 San Bernardino County Transportation Authority (SBCTA). 2021. San Bernardino County Regional Greenhouse Gas Reduction Plan. March. Website: https://www.gosbcta.com/plan/regional-greenhouse-gas-reduction-plan/ (accessed July 7, 2022).

30 City of Upland. 2015c. City of Upland General Plan, Open Space and Conservation Element. Website: https://www.uplandca.gov/uploads/ftp/city_departments/development_services/planning/general_plan_map/pdfs/06_Open%20Space-Conservation%20Element%20-%20revised%20map.pdf (accessed January 2023).

31 City of Upland. 2015d. Final Program Environmental Impact Report, pages 5.6-19 to 5.6-32. September 28. Website: https://www.uplandca.gov/uploads/files/DevelopmentServices/Environmental%20Review%20Documents/FINAL%20GENERAL%20PLAN%20EIR%20with%20comments%20COMBINED.pdf (accessed July 7, 2022).

emissions sources for the area, which include energy consumed in buildings and for transportation as well as the solid waste sent to landfills.

4.4.2 Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to GHG emissions that could result from implementation of the proposed project.

A single project typically does not generate a sufficient quantity of GHG emissions to affect global climate change; therefore, the global climate change impacts of the proposed project are discussed in the context of cumulative impacts, following the approach recommended by the SCAQMD. This section begins by establishing the thresholds to determine whether an impact is significant and then analyzes GHG emissions both quantitatively and qualitatively. The latter part of this section evaluates the GHG emissions expected to result from the project and the recommended feasible mitigation measures, if required.

4.4.2.1 Significance Criteria

Per Appendix G of the *State CEQA Guidelines*, the proposed project would have a significant impact related to GHG emissions if it would:

Threshold GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Threshold GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Project-Specific Thresholds. Section 15064.4 of the *State CEQA Guidelines* states "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project." In performing that analysis, the lead agency has discretion to determine whether to use a model or methodology to quantify GHG emissions or to rely on qualitative analysis or performance-based standards. In making a determination as to the significance of potential impacts, the lead agency then considers the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting, whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and 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.

SCAQMD has adopted a significance threshold of 10,000 MT CO_2e per year (MT CO_2e/yr) for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010 (Meeting No. 15), SCAQMD proposed to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2. Consistency with a Locally Adopted GHG Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3. Numerical Screening Threshold:** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a "bright-line" screening-level threshold of 3,000 MT CO_2e/yr for all land use types or the following land use-specific thresholds: 1,400 MT CO_2e for commercial projects, 3,500 MT CO_2e for residential projects, or 3,000 MT CO_2e for mixed-use projects. This bright-line threshold is based on a review of the OPR database of CEQA projects. Based on the OPR's review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore less than, cumulatively considerable impact on GHG emissions.

- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MT CO_2e per year per service population (MT CO_2e/year/SP) for project-level analyses and 6.6 MT CO_2e/yr/SP for plan-level projects (program-level projects such as general plans). The GHG efficiency metric divides annualized GHG emissions by the service population, which is the sum of residents and employees, per the following equation:

  Rate of Emission = GHG Emissions (MT CO_2e/yr) ÷ Service Population

  The efficiency evaluation consists of comparing the project's efficiency metric to efficiency targets. Efficiency targets represent the maximum quantity of emissions each resident and employee in the State of California could emit in various years based on emissions levels necessary to achieve the statewide GHG emissions reduction goals. A project that results in a lower rate of emissions would be more efficient than a project with a higher rate of emissions, based on the same service population. The metric considers GHG reduction measures integrated into a project's design and operation (or through mitigation). The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for the CARB's 2008 Scoping Plan.

Based on guidance from the SCAQMD, if a non-industrial project would emit GHGs less than 3,000 MT CO_2e/yr, the project is not considered a substantial GHG emitter, and the GHG impact would be less than significant, thereby requiring no additional analysis and no mitigation. If a non-industrial

project would emit GHGs in excess of 3,000 MT CO_2e/yr, then the project could be considered a substantial GHG emitter, thereby requiring additional analysis and potential mitigation. Therefore, 3,000 MT CO_2e/yr is used as the applicable threshold in this analysis.

4.4.2.2 Project Impacts

The following section describes potential impacts associated with GHG emissions that could occur with development of the proposed project.

Threshold GHG-1: Generation of GHG Emissions. This section describes the proposed project's construction- and operation-related GHG emissions and contribution to global climate change. SCAQMD has not addressed emissions thresholds for construction in its *CEQA Air Quality Handbook*; however, SCAQMD requires quantification and disclosure.

Construction. Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would emit GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the construction period. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, the fueling of heavy equipment emits CH_4. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires that construction GHG emissions be amortized over the life of the project (which is defined as 30 years), added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. Since the proposed project would be built over a 7-year period, the life of the project would likely be longer than 30 years; however, to be conservative, this analysis still assumes a 30-year life.

As stated in in Section 4.2, Air Quality, construction emissions were estimated for the project using CalEEMod, consistent with SCAQMD recommendations. As discussed in Chapter 3.0, Project Description, the proposed project would be constructed in five phases: site preparation, grading, building construction, paving, and architectural coating. The construction duration is estimated to last for approximately 24 months, beginning 2024 and ending in 2025. **Table 4.4.D** presents the total construction-related emissions (all five phases) amortized over 30 years for the project, totaling approximately 19.14 MT CO_2e/yr. Construction emissions would be temporary in nature and would only occur for the duration of the construction period. In addition, as stated in Section 4.2, Air Quality, emissions resulting from project construction would not exceed SCAQMD thresholds for any criteria pollutants (**Table 4.2.C**).

Table 4.4.D: Total Project GHG Emissions

Source	Emissions (lbs/day)				
	CO_2	CH_4	N_2O	Refrigerants	Total CO_2e
Annual construction-related emissions amortized over 30-years	18.77	1.00E-03	1.00E-03	8.00E-03	19.14
Mobile	778	0.04	0.04	1.32	792.00
Area	15.1	<0.005	<0.005	0	15.1
Energy	186	0.02	<0.005	0	187
Water	16.3	0.09	<0.005	0	19.2
Waste	5.6	0.56	0	0	19.6
Refrigerants	0	0	0	0.13	0.13
Total CO_2e (all sources)	**1,052.17**				

Source: Villa Serena Specific Plan Air Quality & Greenhouse Gas Assessment, Table 8, page 25 (Urban Crossroads. 2023a).
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
N_2O = nitrous oxide

Operation. Long-term GHG emissions are typically generated from mobile sources (e.g., vehicle trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated vehicle trips to and from the project site. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Energy source emissions would be generated at off-site utility providers because of increased electricity demand generated by the proposed project. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

The estimated GHG emissions for operation of the proposed project are summarized in **Table 4.4.D.** The estimated GHG emissions include CO_2, CH_4, N_2O, and refrigerants. The total project GHG emissions generated would be 1,033.03 MT CO_2e/yr (operations only) or 1,052.17 MT CO_2e/yr (with construction emissions).

As discussed above, according to SCAQMD, if a non-industrial project would emit GHGs less than 3,000 MT CO_2e/yr, the project is not considered a substantial GHG emitter, and the GHG impact would be less than significant, thereby requiring no additional analysis and no mitigation. The proposed project would result in approximately 1,052.17 MT CO_2e/yr; therefore, the proposed project would not exceed SCAQMD's numeric threshold under Tier 3. Therefore, this impact would be **less than significant,** and no mitigation is warranted.

Threshold GHG-2: Conflict with a GHG Reduction Plan. Pursuant to Section 15604.4 of the *State CEQA Guidelines*, a lead agency may rely on qualitative analysis or performance-based standards to

determine the significance of impacts from GHG emissions. The proposed project's consistency with the City of Upland's CAP is evaluated in the following discussion.

City of Upland Climate Action Plan. The proposed project would be required to comply with CALGreen building standards (General Plan Policy OSC-5.11) as well as implementing various sustainability features with which the project applicant is required to comply.[32] These features would foster, among other benefits, reductions in energy consumption, waste generation, and associated pollution. Newer construction materials and practices, current energy efficiency requirements, and newer appliances tend to emit lower levels of air pollutant emissions, including GHGs, as compared to materials and equipment used years ago. Among the City's methods to reduce GHG emissions is to encourage "smart growth" or promote efficient land use development.

Under the City's CAP Objective B: Maximize Land Use Efficiency, the proposed project is consistent with transportation and land use Measure T-7: Residential Density.[33] The proposed project would increase residential density on a portion of the existing flood control basin, which would help the City to increase residential land use density goals in the CAP.

CARB Scoping Plan. Although the CARB Scoping Plan is applicable to State agencies but is not directly applicable to cities/counties and individual projects, new regulations adopted by the State agencies outlined in the Scoping Plan result in GHG emission reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard and changes in the CAFE standards (e.g., Pavley I and Pavley California Advanced Clean Cars program). Although measures in the Scoping Plan apply to State agencies and not the proposed project, the project's GHG emissions would be reduced by compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed project was analyzed for consistency with the goals of the 2022 Scoping Plan, EO B-30-15, SB 32, and AB 197.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. The CARB released the 2017 Scoping Plan[34] to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 builds on AB 32 and keeps California on track toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990

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32 City of Upland. 2015d. Final Program Environmental Impact Report. Pages 5.6-23 to 5.6-31. September 28. Website: https://www.uplandca.gov/uploads/files/DevelopmentServices/Environmental%20Review%20Documents/FINAL%20GENERAL%20PLAN%20EIR%20with%20comments%20COMBINED.pdf (accessed July 7, 2022).

33 Ibid. Page 5.6-23.

34 California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November. Website: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents (accessed January 2023).

levels. AB 197, which is the companion bill to SB 32, provides additional direction to CARB that is related to adopting strategies to reduce GHG emissions. Additional direction in AB 197, which was intended to provide easier public access to air emissions data that are collected by the CARB, was posted in December 2016.

The 2022 Scoping Plan[35] assesses progress toward the statutory 2030 target while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The 2022 Scoping Plan focuses on building clean energy production and distribution infrastructure for a carbon-neutral future, including transitioning existing energy production and transmission infrastructure to produce zero-carbon electricity and hydrogen, and utilizing biogas resulting from wildfire management or landfill and dairy operations, among other substitutes. The 2022 Scoping Plan states that in almost all sectors, electrification will play an important role. The 2022 Scoping Plan evaluates clean energy and technology options and the transition away from fossil fuels, including adding four times the solar and wind capacity by 2045 and about 1,700 times the amount of current hydrogen supply. As discussed in the 2022 Scoping Plan, EO N-79-20 requires that all new passenger vehicles sold in California will be zero-emission by 2035, and all other fleets will have transitioned to zero-emission as fully possible by 2045, which will reduce the percentage of fossil fuel combustion vehicles.

Energy measures are intended to increase renewable energy generation sources. Future projects would be required to comply with the latest Title 24 and CALGreen Code standards regarding water efficiency and energy conservation requirements. In addition, electricity would be provided by Southern California Edison (SCE)[36], which is required to increase its renewable energy sources to meet the Renewable Portfolio Standards mandate of 60 percent renewable supplies by 2030. In addition, SCE plans to continue to provide reliable service to its customers and upgrade its distribution systems as necessary to meet future demand. Therefore, the proposed project would not conflict with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, future projects would be required to comply with the latest Title 24 and CALGreen Code standards, which include a variety of different measures, including reduction of wastewater and water use. In addition, the future projects would be required to comply with the California Model Water Efficient

35 California Air Resources Board (CARB). 2022. *2022 Scoping Plan for Achieving Carbon Neutrality*. November 16. Website: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf, accessed January 2023.

36 Madole & Associates. n.d. City of Upland Precise Grading Plans Tract No. 20245.

Landscape Ordinance. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to increase zero emission vehicles and decrease VMT. As described in Section 4.7, Transportation and Traffic, the proposed project is located within a low VMT area. The proposed project is located in an urban area that is supported by nearby transit facilities and pedestrian/bicycle networks, which would reduce vehicle trips and VMT. Therefore, the proposed project would not conflict with identified transportation and motor vehicle measures.

SCAG's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy. SCAG's 2020–2045 RTP/SCS, which was adopted September 3, 2020, identifies land use strategies that focus on new housing and job growth in areas served by high-quality transit and other opportunity areas that would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2020–2045 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster development in transit-oriented communities. The 2020–2045 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as forecast development that is generally consistent with regional-level general plan data. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in the 2020–2045 RTP/SCS, would reach the regional target of reducing GHG emissions from autos and light-duty trucks by 19 percent by 2035 (compared to 2005 levels). The 2020–2045 RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the 2020–2045 RTP/SCS but does provide consistency incentives for governments and developers.

The project site is located in a predominantly developed area and would include the construction of 65 single-family residential dwelling units. The latest statistical figures published by SCAG for Upland's average household size assume 2.9 persons per housing unit;[37] therefore, the proposed project would increase Upland's population by approximately 189 persons.

The latest figures provided by the California Department of Finance (DOF) indicate that Upland has a population of approximately 78,958 persons.[38] The SCAG Demographic Forecast estimates that Upland would grow from its 2016 population of 76,400[39] to approximately 93,000 persons by 2045. The proposed project's contribution to growth (189 persons) would represent a

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37 Southern California Association of Governments (SCAG). 2019. Local Profiles Report 2019, Profile of the City of Upland, page 3. May. Website: https://scag.ca.gov/sites/main/files/file-attachments/upland_localprofile.pdf?1606014822 (accessed January 2023).

38 California Department of Finance. 2023. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2022*.

39 Southern California Association of Governments (SCAG). 2020b. *Demographics and Growth Forecast*, page 40. September 1. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579 (accessed January 2023).

negligible amount of the future growth forecast in Upland (1.3 percent of the population difference between the DOF 2022 and SCAG 2045 forecasts).

The City's General Plan does not specify or anticipate when complete buildout would occur because long-range demographic and economic trends are difficult to predict. The designation within the General Plan of a site for a certain use does not necessarily mean that the site would be developed with that use during the planning period because most development depends on property owner initiative and market trends. Although the project site's existing land use designation is Public Utilities-Flood Control/Recharge, the proposed General Plan Amendment to the Villa Serena Specific Plan, which would result in an increase in residential uses beyond those planned for by the City at General Plan buildout, would contribute to the balance of the City's current and future jobs-to-housing ratio consistent with both the SCAG forecasts and the City's growth forecasts, all while not inducing substantial direct or indirect population growth in the area. The proposed project would relocate a portion of the existing flood control basin adjacent to the east in order to maintain adequate local flood control and recharge, but it would not otherwise include the construction of new roadways or infrastructure beyond that which would serve only the project site. Therefore, the proposed project would not exceed the growth assumptions in the SCAG's RTP/SCS.

In the absence of inconsistency with local, regional, or State plans for the reduction of GHGs, impacts are **less than significant**; therefore, no imitation is warranted.

4.5 HYDROLOGY AND WATER QUALITY

This section provides an overview of the hydrology and water quality conditions at and near the project site and assesses potential impacts to hydrology and water quality that could result from implementation of the proposed project. Mitigation measures to reduce significant impacts are identified, where appropriate.

4.5.1 Setting

This section describes existing conditions related to hydrology and water quality at and near the project area, as well as applicable regulatory agency framework and local policies.

4.5.1.1 Drainage and Surface Waters

The project site is within the Santa Ana River Watershed (watershed), which encompasses a 2,840-square-mile area. The upper watershed, or headwaters, including the highest point in the drainage system, is delineated by the east-west ridgeline of the San Gabriel and San Bernardino Mountains. Past this ridgeline lies the Mojave Desert, which is part of the Lahontan Basin. The principal tributary streams in the upper watershed originate in the San Bernardino and San Gabriel Mountains. These tributaries include San Timoteo, Reche, Mill, Plunge, City, East Twin, Waterman Canyon, Devil Canyon, and Cajon Creeks and University Wash from the San Bernardino Mountains, while Lone Pine, Lytle, Day, Cucamonga, Chino, and San Antonio Creeks are tributaries from the San Gabriel Mountains.

In the southern portion of the watershed, the regional boundary divides the Santa Margarita River drainage area, which is not part of the watershed, from that of the San Jacinto River. The San Jacinto River, which is part of the watershed, starts in the San Jacinto Mountains, runs west through Canyon Lake, and normally ends in Lake Elsinore. In wet years, the San Jacinto River will overflow the lake and connect with the Santa Ana River through the Temescal Wash. Flood flows from the San Jacinto River produce a broad, shallow wetlands area called Mystic Lake.[1]

Two creeks border the east and west limits of the City; San Antonio Creek is located along the City's western boundary, and Cucamonga Creek is located along the eastern boundary. Both are fully improved, engineered concrete channels owned, operated, and maintained by the US Army Corps of Engineers (San Antonio Creek) and the San Bernardino County Flood Control District (Cucamonga Creek), respectively. The City of Upland operates its own local storm drainage system and several basins within the city limits; however, several storm drain systems convey flows to flood control basins owned and operated by the San Bernardino County Flood Control District (SBCFCD).

The project site consists of a portion of the 15th Street Flood Control Basin (15th Street Basin). The 15th Street Basin functions as a flood control basin to minimize and control the release of storm runoff to the meet the capacity of downstream flood control facilities. The total watershed tributary to the 15th Street Basin is 583 acres. The watershed contributes stormwater runoff from developed portions of the city, consisting of single-family residential neighborhoods, multi-family residential

[1] Santa Ana Watershed Project Authority. 2019. *One Water One Watershed Plan 2018: Moving Forward Together.* January.

developments, golf course and open space areas, and regional power generation and transmission facilities. The watershed is broken into five sub-areas, each of which have direct physical connections to the basin. Each of the five drainage subareas contain fully improved storm drain collection systems comprised of concrete catch basins at the street level that connect to concrete pipes or concrete-lined channels. These fully improved drainage systems are continuous from the most upstream collection point in the watershed area to the discharge point at the basin. The basin drains into a network of concrete pipes ranging in size from 60 inches to 102 inches in diameter.

From the southwest corner of the basin, the pipe network travels in the westerly direction from the basin, approximately 800 feet, to a location where the pipe system transitions into a concrete-lined channel, which traverses southerly through the Dry Dock Depot RV and Boat Storage facility. Leaving the Dry Dock Depot property, the discharged flows are conveyed within concrete pipelines, concrete boxes, and concrete channels and released into a series of SBCFCD regional detention basins north and south of 8th Street in Upland. Mitigated flows released from the 8th Street basins are then conveyed through a network of concrete pipelines, concrete boxes, and concrete channels, southerly beyond I-10, Ontario International Airport, and through Ontario until released into another series of SBCFCD detention basins north of Philadelphia Street, between Walker Avenue and Carlos Avenue[2].

4.5.1.2 Groundwater

The project site is within the Chino Subbasin of the Upper Santa Ana Valley groundwater basin.[3] Groundwater in the Chino Subbasin occurs principally in Holocene and Upper Pleistocene alluvium deposits. Groundwater recharge in the Chino Subbasin occurs primarily by direct infiltration or precipitation on the subbasin floor, by infiltration of surface flow, and by underflow of groundwater from adjacent basins.[4] The Chino Subbasin is a very low priority basin according to the criteria established under the Sustainable Groundwater Management Act (SGMA); therefore, a groundwater sustainability plan has not been developed for the subbasin.[5]

There are four storage ponds just east of the 15th Street Basin that provide groundwater recharge. The area and recharge volume of each basin is shown in **Table 4.5.A**. As shown in **Table 4.5.A**, the total existing recharge volume is approximately 280,870 cubic feet.

The depth to groundwater is estimated to be greater than 200 feet below ground surface (BGS).[6]

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2 Madole & Associates, Inc. 2021. Letter to Ms. Freeburn-Marquez, California Department of Fish and Wildlife. November 1.

3 California Department of Water Resources. 2023a. Groundwater Basin Boundary Assessment Tool. Website: https://gis.water.ca.gov/app/bbat/ (accessed October 2023).

4 California Department of Water Resources. 2006. California Groundwater Bulletin 118, Hydrologic Region South Coast, Upper Santa Ana Valley Groundwater Basin, Chino Subbasin. January 20.

5 California Department of Water Resources. 2023b. SGMA Basin Prioritization Dashboard. Website: https://gis.water.ca.gov/app/bp-dashboard/final/ (accessed October 2023).

6 GeoTek, Inc. 2018b. Geotechnical Infiltration Evaluation for Proposed Single-Family Residential Development Assessor's Parcel Numbers (APNs) 1045-121-02 & 1045-151-34 Upland Colonies 59 North of East 15th Street Upland, San Bernardino, County, California. July 12.

Table 4.5.A: Summary of Existing Groundwater Recharge Volumes

Pond	Area (square feet)	Recharge Volume (cubic feet)	Recharge Volume (acre-feet)	Depth (feet)
A	16,331.50	34,908.03	0.80	3.0
B	76,932.04	126,516.06	2.90	2.0
C	19,012.55	25,570.35	0.59	2.0
D	79,252.73	93,876.30	2.16	2.0
Total	**191,528.82**	**280,870.74**	**6.45**	

Source: Madole & Associates (n.d.) (Appendix E)

4.5.1.3 Surface Water and Groundwater Quality

The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses within the project site and surrounding areas, and by the composition of geologic materials in the vicinity. The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) regulate the quality of surface water and groundwater bodies throughout California. In San Bernardino County, including the project site vicinity, the Santa Ana RWQCB is responsible for implementing the Water Quality Control Plan (Basin Plan).[7] The Basin Plan establishes beneficial water uses for waterways, waterbodies, and groundwater within the region and is a master policy document for managing water quality in the region.

Section 303(d) of the federal Clean Water Act (described in Section 4.5.1.8 below) requires states to present the United States Environmental Protection Agency (EPA) with a list of "impaired water bodies," defined as those waterbodies that do not meet water quality standards, which in some cases result in the development of a total maximum daily load (TMDL). On a broad level, the TMDL process leads to a "pollution budget" designed to restore the health of a polluted body of water. The TMDL process provides a quantitative assessment of the sources of pollution contributing to a violation of the water quality standards and identifies the pollutant load reductions or control actions needed to restore and protect the beneficial uses of the impaired waterbody.

According to the Basin Plan, water quality in the Santa Ana region is affected by several factors, including but not limited to wastewater discharge, consumptive use, import of water high in dissolved solids, runoff from urban and agricultural areas, and the recycling of water within the basin. The most serious water-related problem identified by the Basin Plan was water supply. The Santa Ana Region also faces pollutant and toxicity concerns. The Santa Ana River is a discharge-dominated river, receiving most of its inputs from treated wastewater.

The Santa Ana River extends approximately 96 miles from its headwaters to where it drains into the Pacific Ocean. The headwaters for the Santa Ana River and its tributaries originate in the San Gabriel, San Bernardino, and Santa Ana Mountains. From the San Bernardino and San Gabriel

[7] Santa Ana Regional Water Quality Control Board. 2020. Water Quality Control Plan (Basin Plan) for the Santa Ana Basin, amendments adopted up through December 14, 2020. Website: https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/ (accessed October 2023).

Mountains, the Santa Ana River flows through the Santa Ana Valley, then through the Prado Basin and a narrow pass in the Santa Ana Mountains. From the Santa Ana Mountains, the Santa Ana River flows southwesterly to the Pacific Ocean.

Tables 4.5.B and 4.5.C identify the designated beneficial uses for receiving waters. These designations provide a description of how water is used and what beneficial purposes it serves. **Table 4.5.B** provides a description of each of these beneficial water uses, while **Table 4.5.C** provides the specific locations of the various beneficial use designations.

4.5.1.4 Water Supply

According to the City's 2020 Urban Water Management Plan (UWMP),[8] the City provided 18,431 acre-feet of water in its service area (generally the City limits) in 2020. The City's current water needs are met by a water supply portfolio consisting of several sources:

- Imported water from the Metropolitan Water District of Southern California through the Inland Empire Utilities Agency (IEUA)
- Groundwater pumped from City-owned wells and West End Consolidated Water Company (WECWC)
- Groundwater purchased from San Antonio Water Company (SAWCo)
- Surface water purchased from SAWCo and treated by City
- Recycled water purchased from IEUA

As described above, the project site is located within the Chino Subbasin. Water rights in the Chino Groundwater Subbasin were adjudicated in January 1978, which allocated the safe yield to three pools: Overlying Agricultural, Overlying Non-Agricultural, and Appropriative Pools. The City is part of the Appropriative Pool and has rights to 5.202 percent of the safe yield allocated to the Appropriative Pool (54,834 acre-feet) for a total of 2,852 acre-feet.

4.5.1.5 Flooding

According to Federal Emergency Management Agency (FEMA), the project site is not within any flood hazard zones. The nearest 100-year flood hazard zone to the project site is located along Cucamonga Creek, more than 2 miles northeast of the project site. The Base Flood Elevation of this flood hazard zone is 1 foot referenced to the North American Vertical Datum of 1988.[9]

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8 City of Upland. 2021. 2020 Urban Water Management Plan and Water Shortage Contingency Plan. June 2021. Website: https://www.uplandca.gov/uploads/files/PW/Water/Upland%202020%20Urban%20Water%20Management%20Plan.pdf (Accessed June 20, 2022).

9 Federal Emergency Management Agency (FEMA). 2023. National Flood Hazard Layer (NFHL) Viewer, Map No. 06071C8607H, effective August 28, 2008. Website: https://msc.fema.gov/portal/search?AddressQuery=East%2015th%20Street%2C%20Upland%2C%20CA (accessed October 2023).

Table 4.5.B: Descriptions of Beneficial Uses

Designated Beneficial Use	Description of Beneficial Use
Municipal and Domestic Supply (MUN)	Waters used for community, military, municipal, or individual water supply systems including, but not limited to, drinking water supply.
Agricultural Supply (AGR)	Waters used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
Industrial Service Supply (IND)	Waters used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.
Industrial Process Supply (PROC)	Waters used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.
Groundwater Recharge (GWR)	Waters used for natural or artificial recharge of groundwater proposed for future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.
Hydropower Generation (POW)	Waters used for hydroelectric power generation.
Water Contact Recreation (REC1)	Waters used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.
Non-contact Water Recreation (REC2)	Waters used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing and aesthetic enjoyment in conjunction with the above activities.
Warm Freshwater Habitat (WARM)	Waters that support warm water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.
Limited Warm Freshwater Habitat (LWRM)	Waters that support warm-water ecosystems which are severely limited in diversity and abundance as the result of concrete-lined watercourses. Also low, shallow dry weather flows which result in extreme temperature, pH, and/or dissolved oxygen conditions. Naturally reproducing finfish populations are not expected to occur.
Cold Freshwater Habitat (COLD)	Waters that support cold water ecosystems that may include, but are not limited to, preservations and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.
Wildlife Habitat (WILD)	Water that supports wildlife habitats including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.
Rare and Endangered Species Habitat (RARE)	Waters that support habitat necessary for the survival and successful maintenance of plant or animal species designated under State or Federal law as rare, threatened, or endangered.
Spawning, Reproduction, and Development (SPWN)	Waters that support high quality aquatic habitats necessary for reproduction and early development of fish and wildlife.

Source: *Chapter 3: Beneficial Uses*. Santa Ana Basin Plan (Santa Ana Regional Water Quality Control Board 1995).

Table 4.5.C: Locations of Beneficial Uses

Designated Beneficial Use	San Antonio Creek	Chino Creek Reach 2	Chino Creek Reach 1B	Prado Basin Management Zone	Santa Ana River Reach 2	Santa Ana River Reach 1
Municipal and Domestic Supply (MUN)	Present	Excepted	Excepted	Excepted	Excepted	Excepted
Agricultural Supply (AGR)	Present	—	—	—	Present	—
Industrial Service Supply (IND)	Present	—	—	—	—	—
Industrial Process Supply (PROC)	Present	—	—	—	—	—
Groundwater Recharge (GWR)	Present	Present	—	—	Present	—
Hydropower Generation (POW)	Present	—	—	—	—	—
Water Contact Recreation (REC1)	Present	Present*	Present	Present	Present	Present*
Non-contact Water Recreation (REC2)	Present	Present	Present	Present	Present	Present
Warm Freshwater Habitat (WARM)	—	—	Present	Present	Present	Intermittent
Limited Warm Freshwater Habitat (LWRM)	—	Present	—	—	—	—
Cold Freshwater Habitat (COLD)	Present	—	—	—	—	—
Wildlife Habitat (WILD)	Present	Present	Present	Present	Present	Intermittent
Rare and Endangered Species Habitat (RARE)	—	—	Present	Present	Present	—
Spawning, Reproduction, and Development (SPWN)	—	—	—	—	Present+	—

Source: *Chapter 3: Beneficial Uses*. Santa Ana Basin Plan. January 24, 1995; Updated June 2019. Table 3-1 Beneficial Uses – Continued, Pages 3-1, 3-28, 3-37, 3-40, and 3-46.
Note: "Excepted" indicates the waterbody is specifically exempt from the **MUN** designation in accordance with the criteria specified in the "Sources of Drinking Water Policy," which directed the Regional Boards to add the **MUN** Beneficial Use for all waterbodies not already so designated, unless they met certain exception criteria pursuant to Regional Water Quality Control Board Resolution No. 89-42. California State Water Resources Control Board, Resolution No. 88-63, "Sources of Drinking Water Policy," adopted May 19, 1988.
* Access prohibited in all or some portions per agency with jurisdiction.
+ SPWN only from Prado Dam to 0.6 mile downstream of the State Route 90 (Imperial Highway) Bridge.

4.5.1.6 Seiche and Tsunami

Seiches are waves that are created in an enclosed body of water (e.g., a bay, lake, or harbor), that go up and down or oscillate, and do not progress forward like standard ocean waves. Seiches are also referred to as standing waves and are triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis, or tidal influence. The height and frequency of seiches are determined by the strength of the triggering factor(s) and the size of the basin. Triggering forces that set off a seiche are most effective if they operate at specific frequencies relative to the size of an enclosed basin. There are no waterbodies near the project site that could generate a seiche that could impacts the project site.

Tsunamis are long-period water waves caused by underwater seismic events, volcanic eruptions, or undersea landslides. Areas that are highly susceptible to tsunami inundation tend to be low-lying coastal areas, such as tidal flats or marshlands. According to mapping prepared by the California Geologic Survey and the California Governor's Office of Emergency Services, the San Bernardino County is not within a tsunami hazard area.[10]

4.5.1.7 Regulatory Framework

This section provides a brief description of the regulations affecting hydrology and water quality, including the Clean Water Act, National Pollutant Discharge Elimination System (NPDES) Permit Program, and Insurance Program.

Federal Regulations. Federal regulations governing hydrology and water quality include the Clean Water Act, National Pollutant Discharge Elimination System (NPDES) Permit Program, and Insurance Program.

Federal Clean Water Act of 1972. The federal Clean Water Act of 1972 is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It is administered by the EPA. The Clean Water Act operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. The EPA has delegated its authority to implement and enforce most of the applicable water quality provisions of this law to the individual states. In California, the provisions are enforced by nine RWQCBs under the auspices of the SWRCB.

National Pollutant Discharge Elimination System (NPDES) Permit Program. Under Section 402 of the Clean Water Act, the discharge of pollutants through a point source into waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. The NPDES program regulates the discharge of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program is conducted through the SWRCB and the nine RWQCBs. The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs.

Federal Flood Insurance Program. In 1968, Congress created the National Flood Insurance Program in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The National Flood Insurance Program makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. FEMA manages the National Flood Insurance Program and creates Flood Insurance Rate Maps that designate 100-year flood hazard zones and delineate other flood hazard areas. As described above, the project site is not located within a mapped 100-year flood hazard zone or other flood hazard area.

[10] California Geological Survey. 2022. California Tsunami Maps. Website: https://www.conservation.ca.gov/cgs/tsunami/maps (accessed October 2023).

State Regulations. State regulations governing hydrology and water quality include the Porter-Cologne Water Quality Control Act, applicable National Pollutant Discharge Elimination System permits, and the Sustainable Groundwater Management Act.

Porter-Cologne Water Quality Control Act of 1970. The federal CWA places the primary responsibility for the control of water pollution and planning the development and use of water resources with the states, although it does establish certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and the nine RWQCBs broad powers to protect water quality and is the primary vehicle for the implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface water and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste. The City, including the project site, is within the jurisdictional boundaries of the Santa Ana RWQCB.

NPDES Construction General Permit. Construction projects disturbing more than 1 acre of land during construction are required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002 (Construction General Permit).

To obtain coverage under the Construction General Permit, the project applicant must provide via electronic submittal a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects, such as pipeline installations. Construction General Permit activities are regulated at a local level by the RWQCB.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made

by the project applicant when the Notice of Intent is filed (and more details of the timing of the construction activity are known).

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and best management practices (BMPs) that achieve Best Available Technology for treatment of toxic and non-conventional pollutants and Best Conventional Technology for treatment of conventional pollutants. A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to: (1) identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a Qualified SWPPP Practitioner who meets the requirements outlined in the Construction General Permit.

The SWPPP must also include a construction site monitoring program. Depending on the project risk level, the monitoring program may include visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

The Construction General Permit allows non-stormwater discharge of groundwater dewatering effluent if the water is properly filtered and treated to remove sediment and pollutants using appropriate technologies (e.g., filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small-scale peroxide addition, or other minor treatment). Testing of receiving waters would also be required prior to and during the discharge. The discharge of dewatering effluent is authorized under the Construction General Permit if the following conditions are met:

- The discharge does not cause or contribute to a violation of any water quality standard.
- The discharge does not violate any other provision of the Construction General Permit.
- The discharge is not prohibited by the applicable Basin Plan.
- The discharger has included and implemented specific Best BMPs required by the Construction General Permit to prevent or reduce the contact of the non-stormwater discharge with construction materials or equipment.
- The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants.
- The discharge is monitored and meets the applicable numeric action levels.
- The discharger reports the sampling information in the annual report.

If any of the above conditions are not satisfied, the discharge of dewatering effluent is not authorized by the Construction General Permit. If the dewatering activity is deemed by the RWQCB not to be covered by the Construction General Permit or other NPDES permit, and discharge of groundwater to the storm drain system is planned, then the discharger would be required to prepare a Report of Waste Discharge, and if approved by the RWQCB, be issued site-specific Waste Discharge Requirements (WDRs) under NPDES regulations.

Sustainable Groundwater Management Act. The SGMA requires local agencies to form groundwater sustainability agencies for high- and medium-priority basins and develop and implement groundwater sustainability plans to avoid undesirable results, mitigate overdraft, and reach sustainability within 20 years of implementing their sustainability plans. The California Department of Water Resources (DWR) is charged with classifying groundwater basins in California as either high, medium, low, or very low priority. As mentioned above, the Chino Groundwater Subbasin is classified as a very low priority basin by DWR; therefore, preparation of a groundwater sustainability plan is not required for the Chino Groundwater Subbasin.[11]

NPDES Phase I MS4 Permit. The City of Upland is a Co-Permittee of the National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the SBCFCD, the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region Area-Wide Urban Storm Water Runoff Management (San Bernardino MS4 Permit), Order No. R8-2010-0036, NPDES No. CAS618036. Development projects in Upland are subject to compliance with requirements of the San Bernardino MS4 Permit, which became effective on January 29, 2010.[12] The San Bernardino MS4 Permit stipulates requirements for priority projects, including the preparation of a project-specific Water Quality Management Plan (WQMP). The project-specific WQMP would be required to detail the Site Design, Source Control, Low Impact Development (LID), and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in stormwater runoff. The San Bernardino MS4 Permit requires project proponents to implement preventative and conservation techniques (e.g., preserve and protect natural features to the maximum extent practical) prior to considering mitigative techniques (e.g.., structural treatment such as infiltration systems). Furthermore, mitigative measures, such as BMPs that remove stormwater pollutants and reduce stormwater runoff volume, such as infiltration, should be prioritized over other BMPS, such as harvesting and use, evapotranspiration, and biotreatment. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than as a waste product. LID measures provide effective stormwater treatment by filtering pollutants and sequestering them within soils. Additionally, some pollutants may be rendered less toxic through biological action in the soil.[13]

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11 California Department of Water Resources. 2020. Sustainable Groundwater Management Act, 2019 Basin Prioritization. May.

12 State Water Resources Control Board (SWRCB). 2010. Water Quality (WQ) Order R8-2010-0036 NPDES No. CAS618036.

13 Ibid.

Local Regulations. Local regulations include the Upland General Plan.

Upland General Plan. The Public Facilities and Safety Elements of the City of Upland General Plan contains policies and programs pertaining to hydrology and water that would be applicable to the proposed project, as listed below.

Policy PFS-11.1: Protection of Surface Water Resources. Implement the Santa Ana Regional Water Quality Control Board's (SARWQCB) Best Management Practices to protect surface water resources from contamination from runoff containing pollutants and sediment.

Policy PFS-11.2: New Development. Require new development to protect the quality of water bodies and natural drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices (BMPs), Low Impact Development (LID), and hydromodification strategies consistent with the City's NPDES Permit.

Policy PFS-11.3: No Net Increase. Require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.

Policy PFS-11.4: Post-Development Runoff. Require controlling the volume, frequency, duration, and peak flow rates and velocities of runoff from development projects to prevent or reduce downstream erosion and protect stream habitat.

Policy PFS-12.1: Stormwater Conveyance. Design storm drain systems to convey stormwater and recycled water to recharge the groundwater basin.

Policy PFS-12.2: Groundwater Recharge. Work with appropriate agencies to locate available facilities and to provide the retaining facilities necessary to recharge the groundwater basin using the City's stormwater.

Policy PFS-13.1: Best Management Practices. During the construction and operation of projects, promote the use of Best Management Practices (BMPs) to reduce stormwater runoff, improve water quality and reduce the requirements for stormwater runoff drainage infrastructure.

Policy SAF-2.3: Floodplain Storage Maintenance. Maintain and improve storm drainage infrastructure, including the City's urban creeks, to maintain existing floodplain storage.

Policy SAF-2.4: Floodplain Requirements. Regulate development within floodplains in accordance with State and federal requirements and maintain the City's eligibility under NFIP.

4.5.2 Impacts and Mitigation Measures

The following describes the potential impacts of the proposed project related to hydrology and water quality. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as necessary.

4.5.2.1 Criteria of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. Implementation of the proposed project would have a significant impact related to hydrology and water quality if it would:

Threshold HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Threshold HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Threshold HYD-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) Result in substantial erosion or siltation on or off site; (ii) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site; (iii) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or (iv) Impede or redirect flood flows.

Threshold HYD-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Threshold HYD-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.5.2.2 Project Impacts

Threshold HYD-1: Water Quality. The potential for the proposed project to result in a violation of water quality standards or waste discharge requirements exists during both the construction and operation periods, as discussed below.

Construction. The project would involve construction activities such as excavation and grading, which can increase the potential for erosion and sedimentation from stormwater runoff and for the leaching/transport of potential contaminants from disturbed soil. Construction activities would also involve the use of construction materials, equipment, and hazardous materials that can be sources of stormwater and groundwater pollution. If stormwater contacts disturbed soil and/or improperly stored hazardous materials, sediments and contaminants could be entrained in stormwater runoff that could reach waterways and degrade water quality, potentially resulting in a violation of water quality standards.

The project would disturb more than 1 acre of land and therefore would be subject to the requirements of the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with

Construction and Land Disturbance Activities (Construction General Permit [CGP]) NPDES No. CAS000002, Order No. 2022-0057-DWQ. The CGP requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) and implementation of construction BMPs during construction activities. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. The SWPPP would be required to be kept on site and be made available to RWQCB inspectors. Typical sediment and erosion BMPs include protecting storm drain inlets, establishing and maintaining construction exits, and perimeter controls. The SWPPP would also define proper building material staging areas, paint and concrete washout areas, proper equipment/vehicle fueling and maintenance practices, controls for equipment/vehicle washing, and allowable non-stormwater discharges, and would include a spill prevention and response plan. Compliance with the CGP would ensure that stormwater runoff from the project site during construction would not result in erosion/siltation or create other sources of polluted runoff that could degrade groundwater or receiving water quality.

According to the Geotechnical and Infiltration Evaluation for Proposed Single-Family Residential Development Assessor's Parcel Numbers (APNs) 1045-121-02 & 1045-151-34 Upland Colonies 59 North of East 15th Street Upland, San Bernardino County (Geotechnical Report)[14] prepared by GeoTek in July 2018, the depth to groundwater is greater than 200 feet below grade (bgs). Based on the recorded depths of groundwater, excavation activities would not have the potential to encounter groundwater, and groundwater dewatering would not be required during construction activities.

Infiltration of stormwater can have the potential to affect groundwater quality in areas of shallow groundwater. As discussed above, the depth to groundwater is greater than 200 feet bgs. Pollutants in stormwater are generally removed by soil through absorption as water infiltrates. Therefore, in areas of deep groundwater, there is more absorption potential and, as a result, less potential for pollutants to reach groundwater. Therefore, due to the depth to groundwater, it is not expected that any stormwater that may infiltrate during construction would affect groundwater quality because there is not a direct path for pollutants to reach groundwater. Therefore, project construction would not substantially degrade groundwater quality and construction-related impacts would be **less than significant**.

Operation. During the operational phase of the proposed project, the proposed project would result in the introduction of new residential land uses on the project site, which is currently undeveloped land used as a flood control basin. Therefore, the proposed project would generate new pollutants of concern, which could impact the quality of stormwater runoff. For example, pollutants associated with vehicles (e.g., fuel, oil/lubricants, brake dust, and fallout from exhaust) would be deposited on the surface of parking areas and driveways which would contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Debris and particulates that gather on impervious

[14] GeoTek, Inc. 2018. Geotechnical and Infiltration Evaluation for Proposed Single-Family Residential Development Assessor's Parcel Numbers (APNs) 1045-121-02 & 1045-151-34 Upland Colonies 59 North of East 15th Street Upland, San Bernardino County, California. July 12, 2018.

surfaces, such as paved areas and roofs of buildings, can also add metals and sediment to the pollutant load in runoff. In addition, landscape maintenance activities may involve the use of chemicals such as pesticides/ herbicides and fertilizers which could also impact the quality of stormwater runoff. The change in land uses could also result in increased trash generation. These pollutants could be transported in runoff from the project site and thereby degrade water quality in SBCFCD regional detention basins and the Santa Ana River.

The proposed project is a new development project that would create 10,000 square feet or more of impervious surface and therefore would be required to prepare and implement a Final WQMP as required by the San Bernardino MS4 Permit. The Final WQMP would specify the Site Design, Source Control, LID, and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in stormwater runoff. Site Design BMPs are stormwater management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a site. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into stormwater. LID BMPs mimic a project site's natural hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious storm drains. Treatment Control BMPs are structural BMPs designed to treat and reduce pollutants in stormwater runoff prior to releasing it to receiving waters. A preliminary approach to water quality management approach has been developed to reduce impacts to water quality from operation of the project while simultaneously maintaining groundwater recharge, which is consistent with the requirements of the San Bernardino MS4 Permit. In the post-development condition, the proposed project would include four ponds to collect and infiltrate stormwater from the project site. As required by the San Bernardino MS4 Permit, the proposed project would be required to prepare a Final WQMP, which would ensure that the project design would adequately target pollutants of concern in runoff from the project site. Therefore, required compliance with the San Bernardino MS4 Permit would ensure the protection of surface water quality during operation of the project and impacts would be **less than significant**.

Threshold HYD-2: Groundwater Supplies and Recharge. The potential for the proposed project to result in adverse effects to groundwater during construction period dewatering, alteration of existing pervious surfaces, or through use of groundwater supply sources during project operations is discussed below.

Construction. According to the Geotechnical Report prepared for the proposed project, the depth to groundwater is greater than 200 feet bgs. Because of the depth to groundwater, excavation activities would not be anticipated to encounter groundwater during construction. Therefore, groundwater dewatering would not be required. Furthermore, groundwater extraction would not be required during project construction. Therefore, construction impacts related to depletion of groundwater supplies or interference with groundwater recharge would be **less than significant**, and no mitigation would be required.

Operation. As described above, the project site consists of a portion of the 15th Street Basin. The 15th Street Basin has a total existing recharge volume of approximately 280,870 cubic feet. As described in Section 3.0, Project Description, the proposed project would include modifications

to the existing ponds within the 15th Street Basin. Pond D would remain in its current condition with a volume of 93,876 cubic feet of dead storage for groundwater recharge. The bottom of Pond C would be modified, graded, and lowered 8 feet with a new recharge volume of 88,025 cubic feet. The bottom of Pond B would be lowered 7 feet with a new recharge volume of 211,732 cubic feet. Pond A would be removed entirely. Finally, the water quality management measures that would be included in the proposed project, such as detention basins and landscaped areas, would have a recharge volume of 28,809 cubic feet. A summary of the post-developed groundwater recharge volumes is provided in **Table 4.5.D.**

Table 4.5.D: Summary of Post-Developed Groundwater Recharge Volumes

Pond	Area (square feet)	Recharge Volume (cubic feet)	Recharge Volume (acre-feet)	Depth (feet)
B	45,711.12	211,732.65	4.86	7.0
C	18,8332.64	88,025.40	2.02	8.0
D	79,252.73	93,876.30	2.16	2.0
Water Quality Management	--	28,809.00	0.66	--
Total	**143,296.48**	**422,443.35**	**9.70**	

Source: Madole & Associates (n.d.)(Appendix E)

As shown in **Table 4.5.D**, implementation of the proposed project, including the modifications to the existing 15th Street Basin, would result in an increase in the recharge volume of the on-site recharge from 6.45 acre-feet (see **Table 4.5.A**) to 9.7 acre-feet, an increase of 3.25-acre feet. Therefore, the proposed project would result in an increase in groundwater recharge potential compared to the existing condition. Therefore, the proposed project would have a beneficial impact related to groundwater recharge and this impact would be **less than significant**.

Water Supply. As described under Section 4.5.1.4 above, the City's current water needs are met by a water supply portfolio consisting of several sources, which include groundwater from City-owned wells and WECWC and Groundwater purchased from SAWCo. While the proposed project would increase the demand on water supply, it would limit the increase in demand by using water-efficient interior plumbing fixtures, appliances, and equipment. As described in Section 6.0, Other CEQA Considerations, the proposed project's demand for water was accounted for in the 2020 UWMP, and the projected demand for water use associated with the project site are consistent with the projected demand growth anticipated by the UWMP.

Therefore, the proposed project would result in increased water demands that would conflict with the management of any groundwater basin, and impacts related to the sustainable management of the groundwater basin would be **less than significant**.

Threshold HYD-3: Drainage Patterns. Construction activities would involve excavation and grading, which would temporarily expose soil to potential erosion and increase the risk of siltation in storm drainage systems and receiving waters. As described under Threshold HYD-1 above, compliance with the CGP, requiring the preparation of a SWPPP to identify construction BMPs to be implemented as part of the proposed project to reduce impacts to water quality during construction, would ensure

that potential impacts related to erosion of exposed soil or sedimentation of receiving waters or the storm drain system during construction of the proposed project would be **less than significant**.

During operation of the project, the project site would be covered by structures, pavement, and landscaped areas, with no ongoing soil exposure or disturbance that could result in erosion and siltation. Stormwater runoff from the project would be treated in groundwater recharge basins in accordance with the requirements of the San Bernardino MS4 Permit, which would minimize the amount of silt in stormwater runoff and reduce the rate of stormwater runoff from the project site compared to the existing condition. The proposed groundwater recharge basins would decrease the potential for erosion in downstream drainage courses, by detaining and infiltrating stormwater on-site. Operation of the project would therefore have **less than significant** impacts related to erosion and siltation.

The proposed project would alter the surface water drainage patterns on the project site by altering impervious/pervious surfaces and installing new stormwater treatment and drainage facilities. As described under Threshold HYD-2 above, the proposed project would include modifications to the existing 15th Street Basin that would increase the amount of groundwater recharge on the project site, which would ensure that stormwater runoff from the project site and the 15th Street Basin as a whole would not increase compared to the existing conditions. Therefore, the project would not create additional runoff that could contribute to exceeding the capacity of existing or planned stormwater drainage systems. Therefore, the proposed project would have **less than significant** impacts related to on-site or off-site flooding. Furthermore, as described under Threshold HYD-1 above, required compliance with the CGP and San Bernardino MS4 Permit would ensure the project would not result in substantial additional sources of polluted runoff.

Threshold HYD-4: Flood Hazards. As described above, the project site is not located within a flood hazard zone or tsunami hazard area. There are no water bodies located near the project site that could generate a seiche that could impact the project site. Therefore, potential impacts related to the release of pollutants as a result of flooding, tsunami, or seiche would be **less than significant**.

Threshold HYD-5: Water Quality Control Plan or Sustainable Groundwater Management Plan. As described under Thresholds HYD-1 and HYD-2, the proposed project would be required by existing State Law to comply with the requirements of the San Bernardino MS4 permit. Therefore, the proposed project would not conflict with any water quality control plans, and this impact would be less than significant. Additionally, as described in Section 4.5.1.2, the project site is located within the Chino Subbasin of the Upper Santa Ana Valley groundwater basin. The Chino Subbasin is a very low priority basin according to the criteria established under the SGMA; therefore, a groundwater sustainability plan has not been developed for the subbasin. Furthermore, as described in Threshold HYD-2, the proposed project would result in an increase in groundwater recharge within the 15th Street Basin. Therefore, the proposed project would result in a beneficial impact related to groundwater recharge and would not conflict with a sustainable groundwater management plan. This impact would be **less than significant**.

4.5.2.3 Cumulative Impacts

The geographic areas of concern for cumulative hydrology and surface water quality impacts are the streets, storm drains, and surface waters that could receive runoff from the project site and cumulative projects. The geographic areas of concern for cumulative groundwater quality and supply impacts are Upper Santa Ana Valley groundwater basin and Chino Subbasin. It should be noted that there are no current or probable future projects under City review within the vicinity of the project site.

Stormwater runoff and groundwater dewatering from the project site and cumulative projects occurring under buildout of the General Plan could result in degradation of surface water and groundwater quality if appropriate management of stormwater runoff and groundwater dewatering are not performed. Stormwater discharges from past and existing projects within the project vicinity have contained pollutants that have contributed to impairment of the water quality of SBCFCD regional detention basins and the Santa Ana River, which is a cumulative impact. Stormwater regulations have become progressively more stringent since the passing of the federal CWA, and current regulations require new developments to manage and treat all significant sources of stormwater pollutants, which includes potential erosion and siltation. Compliance with the CGP would ensure that stormwater runoff during project construction would not result in significant erosion/siltation or degradation of receiving water quality. During operation, the project site would not be susceptible to erosion and stormwater runoff would be treated in accordance with the San Bernardino MS4 Permit and the City's Municipal Code. Therefore, the project's contribution to cumulative erosion, siltation, and other surface water quality degradation would be less than significant. Cumulative projects would also be subject to existing regulations that protect surface water quality and prevent erosion and siltation during construction and operation. Compliance with existing regulations that protect stormwater runoff quality would also serve to protect groundwater quality during construction and operation of the proposed project and cumulative projects. Therefore, the project's contribution to the cumulative degradation of surface and groundwater quality would be **less than significant**.

The proposed project would increase the groundwater recharge potential of the 15th Street Basin and therefore would not contribute to a decrease in infiltration and groundwater recharge and would have a beneficial effect related to groundwater recharge. Therefore, the proposed project would not contribute to cumulative impacts related to decreased groundwater recharge due to increasing impervious surfaces and this impact would be **less than significant**.

As described under Threshold HYD-2 above, the project's demand for water was accounted for and consistent with the projected demand growth anticipated by the 2020 UWMP. Therefore, the proposed project's contribution to cumulative impacts related to sustainable management of a groundwater basin would be **less than significant**.

The proposed project and cumulative projects would alter existing drainage patterns (e.g., by altering impervious surfaces), which could alter stormwater runoff patterns and impact the capacity of existing storm drain systems. As described under Threshold HYD-3, the proposed project would not result in an increase in the rate of stormwater runoff from the project site compared to existing conditions. Therefore, the project would not create additional runoff that could contribute to a

cumulative impact of exceeding the capacity of stormwater drainage systems and this impact would be **less than significant**.

As described under Threshold HYD-4 above, the project site is not located within or adjacent to a flood hazard zone or tsunami hazard area, and there are no waterbodies near the project site that could generate a seiche that could impact the project site. Therefore, the project's contribution to cumulative impacts related to the release of pollutants as a result of flooding, tsunami, or seiche would be **less than significant**.

As described under Threshold HYD-5 above, the proposed project would not conflict with a water quality control plan or sustainable groundwater management plan, and would result in a beneficial impact related to groundwater recharge. Therefore, the project's contribution to cumulative impacts related to conflicts with a water quality control plan or sustainable groundwater management plan would be **less than significant**.

4.6 NOISE AND VIBRATION

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from construction and operation of the proposed project. Standard conditions of approval and/or mitigation measures to reduce or avoid potentially significant noise and vibration impacts are identified, where appropriate. Information in this section is supplemented by the Villa Serena Noise Assessment prepared for the proposed project, which is included as Appendix F.[1]

4.6.1 Setting

This section describes the fundamentals of noise and vibration, summarizes the regulatory framework, and describes the existing noise environment of the project site and its vicinity.

4.6.1.1 Characteristics of Sound

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. **Table 4.6.A** contains a list of typical acoustical terms and definitions. **Figure 4.6-1** shows representative outdoor and indoor noise levels in units of A-weighted decibels (dBA).

A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness.

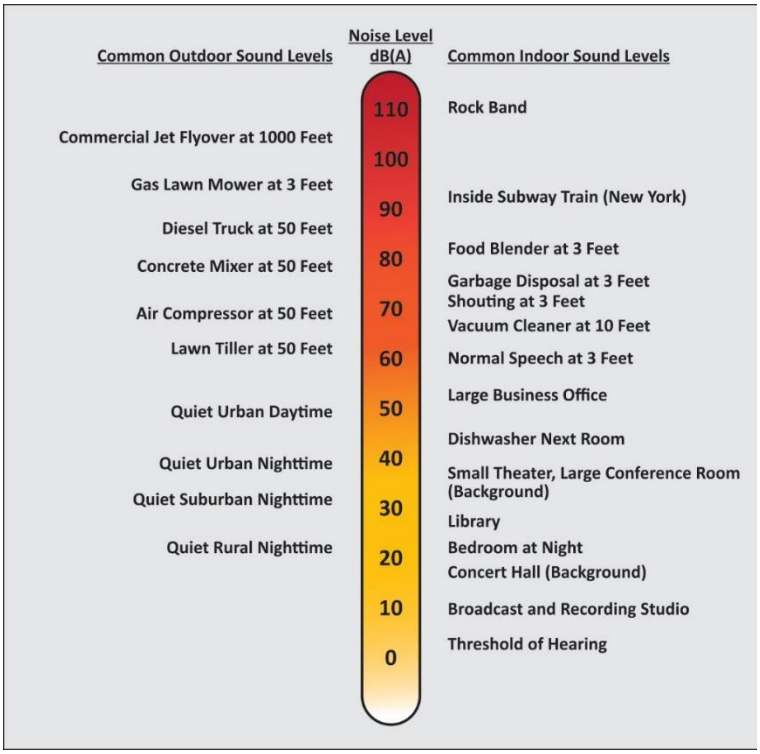
[1] Urban Crossroads. 2023b. *Villa Serena Noise Assessment*. June 20.

Table 4.6.A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes 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 subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Cyril Harris 1998)

Figure 4.6-1: Typical A-Weighted Sound Levels



Source: Compiled by LSA (2016).

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in **Figure 4.6-1.**

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, L_n, are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dBA or greater, because, as described earlier, this level of noise change has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected and a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise. The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, and noise-sensitive work, including learning or listening to the radio, television, or music. According to World Health Organization noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA.[2]

4.6.1.2 Characteristics of Ground-borne Vibration

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as root-mean-square (RMS) velocity in units of decibels of 1 microinch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive ground-borne vibration has the potential to cause structural damage to buildings. Vibration impacts on building structures are generally assessed in terms of peak particle velocity (PPV). Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in **Table 4.6.B.**

4.6.1.3 Existing Noise Environment

The ambient noise environment in Upland is affected by a variety of noise sources, including vehicle traffic, commercial, recreational, and industrial noise. The following section describes the existing noise environment and identifies the primary noise sources in the vicinity of the project site.

[2] World Health Organization. 1999. *Guidelines for Community Noise*.

Table 4.6.B: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: *Transit Noise and Vibration Impact Assessment* (Federal Transit Administration, May 2006)
PPV = peak particle velocity
VdB = vibration velocity decibels

Existing Traffic Noise. Motor vehicles with their distinctive noise characteristics are a major source of noise in the city. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Traffic noise depends primarily on traffic speed (high-frequency tire noise increases with speed) and the proportion of truck traffic, which generates engine, exhaust, and wind noise. The proximity of freeways and major streets, and the large amount of truck traffic serving commercial uses in the area make the city susceptible to traffic noise. Traffic noise at the project site is primarily associated with vehicle traffic on North Campus Avenue, East 16th Street, East 15th Street, and East 14th Street.

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resulting noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing average daily traffic (ADT) volumes were obtained from the Traffic Impact Analysis prepared for the proposed project.[3] A standard vehicle mix for Southern California roadways was used for passenger automotive vehicles on roadways.

Table 4.6.C lists the existing traffic noise levels for roadways within the Project vicinity. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn.

[3] Urban Crossroads. 2022. *Villa Serena Traffic Impact Analysis.* October.

Table 4.6.C: Existing Traffic Noise Levels

Roadway	Segment	Average Daily Traffic	CNEL at nearest receiving land use (dBA)	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)
Campus Ave	N/o 16th St	20,900	69.8	RW	92	198
Campus Ave	S/o 16th St	20,354	69.7	RW	90	194
Campus Ave	N/o 14th St	19,427	69.5	RW	87	188
Campus Ave	S/o 14th St	16,608	68.8	RW	79	170
16th St	W/o Campus Ave	22,614	71.4	RW	118	253
16th St	E/o Campus Ave	23,465	71.6	RW	121	260
15th St	W/o Campus Ave	2,870	61.1	RW	RW	RW
15th St	E/o Campus Ave	100	43.1	RW	RW	RW
15th St	W/o Grove Ave	127	44.1	RW	RW	RW
14th St	W/o Campus Ave	3,581	62.1	RW	RW	RW

Source : Pages 6 and 8, *Villa Serena Noise Assessment* (Urban Crossroads 2023b).
RW = location of the respective noise contour falls within the right-of-way of the road

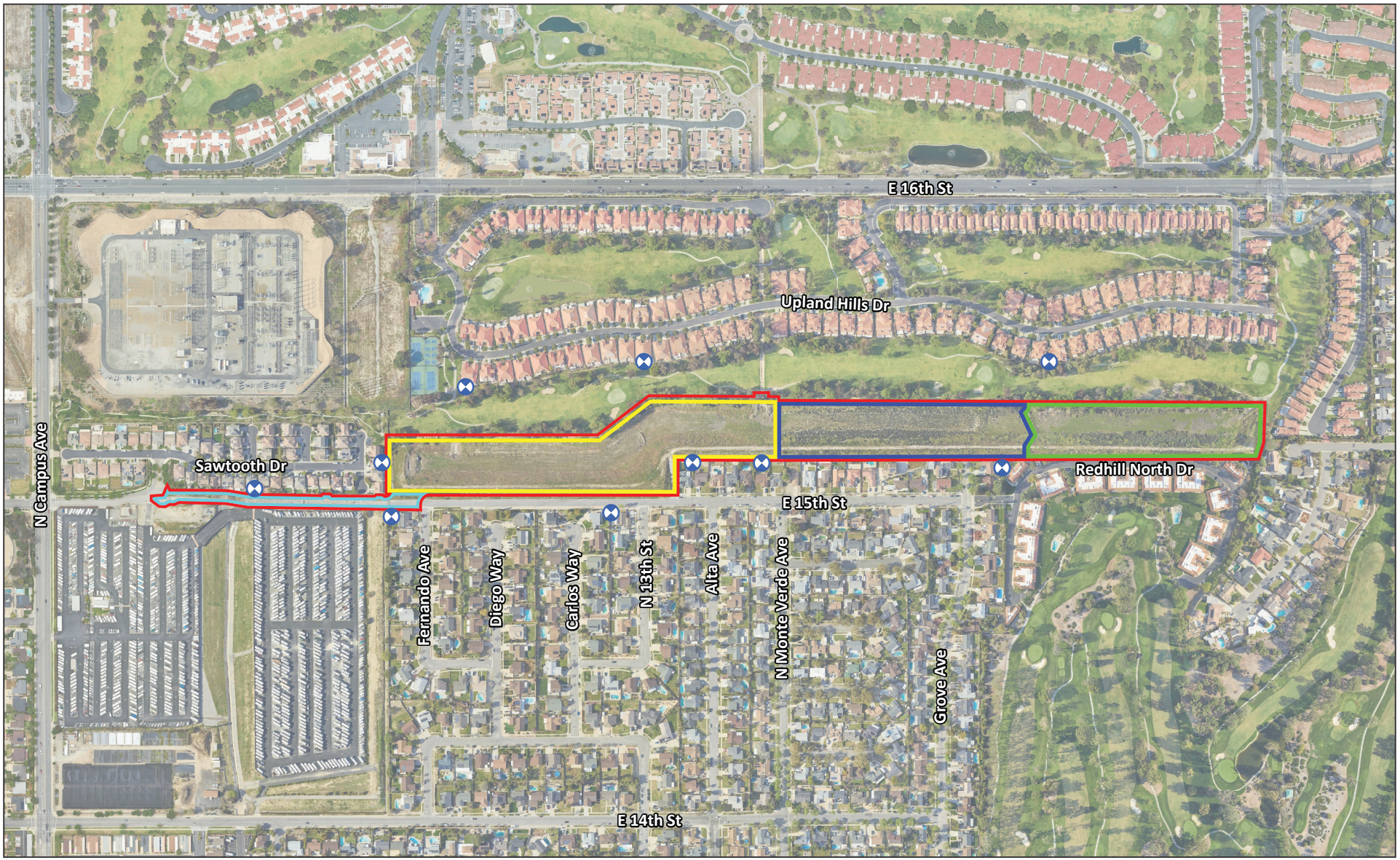
Existing Commercial Noise. Commercial activity from the Drydock Depot boat storage facility to the southwest of the project site is a major noise source at the project site. Truck access, vehicles parking, loading/unloading activities, loudspeaker announcements, and equipment operation are all associated with this site.

Existing Recreational Noise. Recreational uses within Upland include golf courses and city and regional parks. Noise from the Upland Hills Country Club, such as vehicle-related noise and loudspeaker announcements, immediately north of the project site is audible and contributes to noise levels in the vicinity.

Existing Industrial Noise. Southern California Edison's Padua Substation is located northwest of the project site. Noise from the substation, such as ground-level and rooftop mechanical equipment, are audible and contribute to noise levels in the vicinity.

Existing Aircraft Noise. The nearest airport to the project site is Cable Airport, which is located approximately 2.6 miles west. Based on the Cable Airport Land Use Compatibility Plan (ALUCP), the project site is located outside of the airport's compatibility zones, airspace protection zones, allowable object height zones, and noise impact areas.

Existing Sensitive Land Uses. Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, transient lodging, educational facilities, hospitals, childcare facilities, and senior housing. The project site is bordered by residential uses to the south, east, and west, which would be considered sensitive land uses. The nearest residential uses to the project site are single-family uses immediately south of the project site along 15th Street. **Figure 4.6-2** identifies the locations of the 10 modeled noise receivers.



LSA

LEGEND

- Project Site Boundary
- Residential Development Area
- Conservation Area
- Modified Basin
- 15th St Extension and Public Improvements
- Noise Receiver Location

0 312.5 625
FEET

SOURCE: Google Earth, 2023

FIGURE 4.6-2

Villa Serena Specific Plan

Noise Receiver Locations

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Ambient Noise Level Monitoring. To assess the existing noise conditions, 24-hour noise level measurements were conducted at five locations in the vicinity of the project site (shown in Exhibit C of the Noise Assessment). The receiver locations were selected to describe and document the existing noise environment within the vicinity of the project site. The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the project site. **Table 4.6.D** summarizes the existing ambient noise level measurements of the project study area for both daytime and nighttime.

Table 4.6.D: Ambient Noise Level Measurements

Location No.	Description	Energy Average Noise Level (dBA L_{eq})	
		Daytime	Nighttime
L1	Located north of the Project site near single-family residence at 1168 Upland Hills Drive South.	47.2	42.5
L2	Located east of the Project site near single-family residence at 8269 Calle Del Prado.	43.6	39.3
L3	Located south of the Project site near single-family residence at 1335 East 15th Street.	47.2	40.6
L4	Located south of the Project site near single-family residence at 1497 Fernando Avenue.	45.7	41.0
L5	Located west of the Project site near single-family residence at 1520 North Himalayas Circle.	42.6	38.5

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

4.6.1.4 Regulatory Framework

The following section provides brief discussions of the federal and local regulatory framework related to noise.

Federal Transit Administration. Vibration standards included in the FTA Transit Noise and Vibration Impact Assessment Manual[4] were used in this analysis. **Table 4.6.E** provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building, while **Table 4.6.F** lists the potential vibration building damage criteria associated with construction activities.

City of Upland Safety Element. The Safety Element of the City's General Plan lists the goals and policies required to meet the City's noise-related goals. The following lists the applicable goals and policies for the project:

> **Goal SAF-1:** Upland is protected from interior and exterior noise levels that cause harm to safety, health, and well-being.

[4] Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123.* September. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed December 2022).

Table 4.6.E: Interpretation of Vibration Criteria for Detailed Analysis

Land Use	Maximum L_v (VdB)[1]	Description of Use
Workshop	90	Vibration that is distinctly felt. Appropriate for workshops and similar areas not as sensitive to vibration.
Office	84	Vibration that can be felt. Appropriate for offices and similar areas not as sensitive to vibration.
Residential Day	78	Vibration that is barely felt. Adequate for computer equipment and low-power optical microscopes (up to 20×).
Residential Night and Operating Rooms	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power microscopes (100×) and other equipment of low sensitivity.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hz.
FTA = United States Federal Transit Administration
Hz = hertz
L_V = velocity in decibels
VdB = vibration velocity decibels

Table 4.6.F: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate L_V (VdB)[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Nonengineered-timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
µin/sec = microinches per second
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Policy SAF-1.1: Require noise mitigation for all developments where the projected exterior noise levels exceed those shown in Table SAF-1, to the extent feasible.[5]

Policy SAF-1.2: Require noise mitigation for all development that increases existing noise levels by more than the allowable increment shown in Table SAF-4, to the extent feasible.[6]

Policy SAF-1.3: Require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA Ldn for residential, transient lodgings, hospitals, nursing homes, and other uses where people normally sleep; and 45 dBA Ldn (peak hour) for office buildings and similar uses.

[5] Table SAF-1 in the City's Safety Element identifies Low Density Residential land uses cannot exceed the maximum exterior noise standard of 60 dBA.
[6] Table SAF-4 in the City's Safety Element identifies residential noise increment increase of 45 L_{dn} (8 increments) to 80 L_{dn} (0 increments).

Policy SAF-1.4: Prevent noise-sensitive land uses (schools, medical centers and hospitals, senior centers, and residences) from locating in areas with noise levels that exceed those considered normally acceptable for each land use unless measures can be implemented to reduce noise to acceptable levels.

Policy SAF-1.5: Require a noise impact study to evaluate impacts of projects that may exceed 65 L_{dn} as part of the design review process.

Policy SAF-1.7: Require measures that attenuate exterior and/or interior noise levels to acceptable levels to be incorporated into all development projects where current and/or future outdoor noise levels may be unacceptable. Require noise reduction features, the focus of which shall be on site design techniques, so long as they do not conflict with the goals of the Community Character Element.

Policy SAF-1.11: Require construction projects to adhere to the City's construction hours and incorporate measures to minimize impacts.

City of Upland Municipal Code. Chapter 9.40: Unnecessary Noise, of the City of Upland Municipal Code, establishes noise level standards for various land use categories affected by stationary noise sources and not noise from mobile sources or aircraft.

Section 9.40.040 of the City's Municipal Code dictates the commencement of all ambient noise measurements in decibels within the respective times as zones per zoning use. For residential zone use, a measurement starting at 45 decibels must occur between 10:00 p.m. and 7:00 a.m., and a measurement starting at 55 decibels must occur between 7:00 a.m. and 10:00 p.m.

Section 9.40.070 of the City's Municipal Code mandates that exterior residential noise levels shall not exceed specified duration periods per noise level.

- At base ambient noise level (BANL), 30 minutes in any hour shall not be exceeded.
- At 5 dBA above BANL, 15 minutes in any hour shall not be exceeded.
- At 10 dBA above BANL, 5 minutes in any hour shall not be exceeded.
- At 15 dBA above BANL, 1 minute in any hour shall not be exceeded.
- At 20 dBA above BANL, no duration is permitted.

Section 9.40.100(E) of the City's Municipal Code states that it is unlawful for any person to operate any machinery, equipment, device, pump, fan, compressor, air conditioning apparatus, or any similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient noise base level by 5 dBA.

Section 9.40.100(F) of the City's Municipal Code states that it is unlawful for any person to operate any motor vehicle within the city that, due to the nature of the operation of the vehicle, or due to the operating condition of the vehicle, or due to any modification made to the vehicle, generates noise so that a reasonable person is caused discomfort or annoyance.

Section 9.40.100(M) of the City's Municipal Code states that it is unlawful for any person to engage in the erection, excavation, demolition, alteration, or repair of any building other than between the

hours of 7:00 a.m. and 6:00 p.m. on weekdays, except in case of urgent necessity in the interest of public health and safety, and then only with a permit from the building inspector.

Section 9.40.100(O) of the City's Municipal Code states that it is unlawful for any person to operate between the hours of 10:00 p.m. and 7:00 a.m. any steam shovel, pneumatic hammer, derrick, steam or electric hoist or other appliance, the use of which is attended by loud or unusual noise.

4.6.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to noise that could result from implementation of the proposed project. The section begins with significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.6.2.1 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the CEQA Guidelines. Based on these thresholds, implementation of the proposed project would have a significant impact related to noise if it would:

Threshold NOI-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Threshold NOI-2: Generate excessive groundborne vibration or groundborne noise levels.

Threshold NOI-3: Expose people residing or working in the project area to excessive noise levels from a private airstrip or an airport with a land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

Table SAF-4 from the City's General Plan Safety Element outlines the allowable noise exposure increases. Consistent with the City of Upland General Plan Safety Element, the 24-hour CNEL level is used to assess land use compatibility with transportation related noise sources. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. These allowable noise exposures increase levels, which are used as the significance thresholds for Threshold NOI-1, are presented in **Table 4.6.G.**

4.6.2.2 Project Impacts

The following section discusses the potential noise impacts associated with implementation of the proposed project.

Table 4.6.G: Allowable Noise Exposure Levels

Analysis	Conditions	Significance Criteria	
		Daytime	Nighttime
Off-Site Traffic	If ambient is <50 dBA CNEL	≥ 8 dBA CNEL Project increase	
	If ambient is 50–55 dBA CNEL	≥ 5 dBA CNEL Project increase	
	If ambient is 55–60 dBA CNEL	≥ 3 dBA CNEL Project increase	
	If ambient is 60–65 dBA CNEL	≥ 2 dBA CNEL Project increase	
	If ambient is 65–75 dBA CNEL	≥ 1 dBA CNEL Project increase	
	If ambient is >75 dBA CNEL	0 dBA CNEL Project increase	

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).

Threshold NOI-1: Increase in Noise Levels. The following describes the short-term construction and long-term operational noise impacts of the proposed project. As discussed, these impacts would be **less than significant** with implementation of recommended mitigation measures.

Short-Term (Construction) Noise Impacts. Project construction would result in short-term noise impacts on the nearby sensitive receptors. Construction is undertaken in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases change the character of the noise generated on a project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. **Table 4.6.H** lists the maximum noise levels (L_{max}) recommended for noise impact assessments for typical construction equipment included in the FHWA Highway Construction Noise Handbook[7] based on a distance of 50 feet between the equipment and a noise receptor.

Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the project has been completed.

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site, which would incrementally increase noise levels on roads leading to the site. As shown in **Table 4.6.H**, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

Table 4.6.H lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the construction equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1–2 minutes of full power operation followed by 3–4 minutes at lower power settings.

7 FHWA. 2006. FHWA Highway Construction Noise Handbook. Roadway Construction Noise Model, FHWA HEP-06-015. DOT-VNTSC-FHWA-06-02. NTIS No. PB2006-109012. August.

Table 4.6.H: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1]	Maximum Noise Level (L_{max}) at 50 ft[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor	40	80
Crane	16	85
Dozer	40	85
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Forklift	20	85
Front-End Loader	40	80
Grader	40	85
Impact Pile Driver	20	95
Jackhammer	20	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder	40	73

Source: Table 9.1, *FHWA Highway Construction Noise Handbook* (FHWA 2006).
Note: The noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Spec 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
FHWA = Federal Highway Administration
ft = feet
L_{max} = maximum instantaneous noise level

In addition to the reference maximum noise level, the usage factor provided in **Table 4.6.H** is used to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period

E.L. = Noise emission level of the particular piece of equipment at a reference distance of 50 ft

U.F. = Usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time

D = Distance from the receiver to the piece of equipment

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

Error! Reference source not found. shows the composite noise levels of the pieces of equipment for each construction phase at a distance of 50 feet from the construction area. Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq\ (at\ distance\ X) = Leq\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA while halving the distance would increase noise levels by 6 dBA.

To evaluate whether the proposed project would generate potentially significant short-term noise levels at the nearest receptors, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. **Table 4.6.I** shows the receiver locations and highest construction noise level at each location. As shown in **Table 4.6.I**, the construction noise levels are expected to range from 51.2 to 66.9 dBA L_{eq} at the nearby receiver locations and will not exceed the reasonable daytime 80 dBA L_{eq} significance threshold. Therefore, this impact would be **less than significant**.

Table 4.6.I: Construction Noise Levels

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold	Threshold Exceeded?
R1	58.3	80	No
R2	59.3	80	No
R3	51.2	80	No
R4	56.5	80	No
R5	64.7	80	No
R6	66.9	80	No
R7	62.5	80	No
R8	63.7	80	No
R9	61.9	80	No
R10	66.6	80	No

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).

[1] Construction noise source and receiver locations are shown on Exhibit F in the Noise Assessment.

[2] Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations.

Operational Traffic Noise Impacts. The project would generate long-term noise impacts from traffic, stationary, and other operational noise sources, as discussed below.

Traffic Noise Impact. Motor vehicles with their distinctive noise characteristics are the dominant noise source in the project vicinity. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer.

The FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions along street segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. As shown in **Table 4.6.J,** under existing plus project conditions, the proposed project's off-site traffic noise level increases range from 0 to 7.8 dBA on study area roadway segments.

Table 4.6.J: Existing Plus Project Traffic Noise Level Increases

Road	Segment	CNEL at Receiving Land Use (dBA)[1]			Incremental Noise Level Increase Threshold	
		No Project	With Project	Project Addition	Limit[2]	Exceeded?
Campus Av.	n/o 16th St.	69.8	69.8	0.0	1	No
Campus Av.	s/o 16th St.	69.7	69.7	0.0	1	No
Campus Av.	n/o 14th St.	69.5	69.5	0.0	1	No
Campus Av.	s/o 14th St.	68.8	68.8	0.0	1	No
16th St.	w/o Campus Av.	71.4	71.4	0.0	1	No
16th St.	e/o Campus Av.	71.6	71.6	0.0	1	No
15th St.	w/o Campus Av.	61.1	61.2	0.1	2	No
15th St.	e/o Campus Av.	43.1	50.9	7.8	8	No
15th St.	w/o Grove Av.	44.1	46.5	2.4	8	No
14th St.	w/o Campus Av.	62.1	62.2	0.1	2	No

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).
[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[2] City of Upland General Plan Table SAF-4 (see Table 4.6.G).

As shown in **Table 4.6.K,** under cumulative plus project conditions, the proposed project's off-site traffic noise level increases range from 0 to 7.7 dBA CNEL. Based on the significance criteria for off-site traffic noise, land uses adjacent to the study area roadway segments would experience less than significant noise level increases on receiving land uses due to the project-related traffic under both existing and cumulative conditions; therefore, traffic noise impacts are **less than significant,** and no mitigation is warranted.

Table 4.6.K: Cumulative Plus Project Traffic Noise Level Increases

Road	Segment	CNEL at Receiving Land Use (dBA)[1]			Incremental Noise Level Increase Threshold	
		No Project	With Project	Project Addition	Limit[2]	Exceeded?
Campus Ave	n/o 16th St.	70.2	70.2	0.0	1	No
Campus Ave.	s/o 16th St.	70.2	70.2	0.0	1	No
Campus Ave.	n/o 14th St.	70.1	70.1	0.0	1	No
Campus Ave.	s/o 14th St.	69.5	69.5	0.0	1	No
16th St.	w/o Campus Ave.	71.7	71.7	0.0	1	No
16th St.	e/o Campus Ave.	71.9	71.9	0.0	1	No
15th St.	w/o Campus Ave.	61.8	61.8	0.0	2	No
15th St.	e/o Campus Ave.	43.3	51.0	7.7	8	No
15th St.	w/o Grove Ave.	44.4	46.6	2.2	8	No
14th St.	w/o Campus Ave.	62.7	62.8	0.1	2	No

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).
[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[2] City of Upland General Plan Table SAF-4 (see Table 4.6.G).
e/o = east of n/o = north of w/o = west of

Operational Project Site Noise Impacts. To estimate the project operational noise impacts, reference sound power levels were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. The reference Project operational sound power noise levels include A/C condenser units (73 dBA for Bryant 124ANS Series 5-Ton Air Conditioner Unit), and background outdoor activity (75 dBA based on reference outdoor noise level measurements collected by Urban Crossroads, Inc.). Exhibit E in the Noise Assessment shows the anticipated project operational noise source locations.

Using the reference noise levels to represent the proposed project operations that include residential air conditioning units and other background activity, the project-related noise level increases that would be experienced at each of the sensitive receiver locations were calculated. As shown in **Table 4.6.K**, project-related noise at the off-site receiver locations is expected to range from 30.9 to 51.3 dBA L_{eq}. It should be noted that the operational noise analysis includes all 66 air conditioning units and outdoor activities all operating at the same time without accounting for any of the planned residential building structures. In real world operating conditions, the air conditioning units will cycle on and off throughout the day and night. Therefore, the noise levels presented below conservatively overstate the project operational noise levels. As shown in **Table 4.6.L,** operational noise levels would not exceed the City's daytime or nighttime exterior noise level standards at any nearby receiver locations.

To analyze the project operational noise level increase, the project operational noise levels were combined with the existing ambient noise level measurements for the nearby receiver locations potentially impacted by the proposed project. The project-generated noise levels increases are determined by comparing the difference between the project and ambient noise levels. As shown in **Table 4.6.M,** the proposed project would generate a daytime operational noise level increase of 0.2 to 5.5 dBA L_{eq} at the nearest sensitive receptor locations.

Table 4.6.L: Project Operational Noise Levels

Receiver Location	Project Operational Noise Levels (dBA L_{eq})		Noise Level Standards (dBA L_{eq})		Noise Level Standards Exceeded?	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	43.8	34.1	55	45	No	No
R2	50.0	35.3	55	45	No	No
R3	30.9	19.6	55	45	No	No
R4	35.9	20.6	55	45	No	No
R5	44.6	33.6	55	45	No	No
R6	51.3	36.2	55	45	No	No
R7	46.7	33.6	55	45	No	No
R8	43.3	30.0	55	45	No	No
R9	32.9	21.6	55	45	No	No
R10	45.2	31.4	55	45	No	No

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

Table 4.6.M: Daytime Project Operational Noise Level Increases

Receiver Location	Total Project Operational Noise Level	Reference Ambient Noise Levels	Combined Project and Ambient	Project Increase	Increase Criteria	Increase Criteria Exceeded?
R1	43.8	47.2	48.8	1.6	8	No
R2	50.0	47.2	51.8	4.6	8	No
R3	30.9	43.6	43.8	0.2	8	No
R4	35.9	43.6	44.3	0.7	8	No
R5	44.6	47.2	49.1	1.9	8	No
R6	51.3	47.2	52.7	5.5	8	No
R7	46.7	47.2	50.0	2.8	8	No
R8	43.3	45.7	47.7	2.0	8	No
R9	32.9	42.6	43.0	0.4	8	No
R10	45.2	42.6	47.1	4.5	8	No

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).

As shown in **Table 4.6.N,** the proposed project would generate a nighttime operational noise level increase of 0 to 1.3 dBA L_{eq} at the nearest receiver locations. Based on the thresholds presented in **Table 4.6.G**, the proposed project would not exceed the allowable operational noise levels; therefore, operational noise impacts are **less than significant**, and no mitigation is warranted.

Threshold NOI-2: Vibration. Vibration refers to ground-borne noise and perceptible motion. Ground borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves.

Table 4.6.N: Nighttime Project Operational Noise Level Increases

Receiver Location	Total Project Operational Noise Level	Reference Ambient Noise Levels	Combined Project and Ambient	Project Increase	Increase Criteria	Increase Criteria Exceeded?
R1	34.1	42.5	43.1	0.6	8	No
R2	35.3	42.5	43.3	0.8	8	No
R3	19.6	39.3	39.3	0.0	8	No
R4	20.6	39.3	39.4	0.1	8	No
R5	33.6	40.6	41.4	0.8	8	No
R6	36.2	40.6	41.9	1.3	8	No
R7	33.6	40.6	41.4	0.8	8	No
R8	30.0	41.0	41.3	0.3	8	No
R9	21.6	38.5	38.6	0.1	8	No
R10	31.4	38.5	39.3	0.8	8	No

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).

Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads.

Short-Term Construction Vibration Impacts. In general, ground-borne vibration from standard construction practices would result in impacts when construction takes place within 25 feet of sensitive structures. Ground-borne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. With the exception of older buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible The streets surrounding the project area are paved, smooth, and unlikely to cause significant ground-borne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause ground-borne vibration problems. It is, therefore, assumed that no such vehicular vibration impacts would occur and, therefore, no vibration impact analysis of on-road vehicles is necessary. Additionally, once constructed, the proposed project would not contain uses that would generate ground-borne vibration.

This construction vibration impact analysis discusses the level of human annoyance using vibration levels in vibration velocity decibels (VdB) and assesses the potential for building damage using vibration levels in peak particle velocity (PPV) in inches per second (in/sec). Vibration levels calculated in root-mean-square (RMS) velocity are best for characterizing human response to building vibration, whereas vibration levels in PPV are best for characterizing damage potential.

Table 4.6.O shows the reference vibration levels at a distance of 25 feet for each type of standard construction equipment from the Transit Noise and Vibration Impact Assessment Manual.[8] Project construction is expected to require the use of large bulldozers and loaded trucks, which would generate ground-borne vibration levels of up to 87 VdB (0.089 in/sec [PPV]) and 86 VdB (0.076 in/sec [PPV]), respectively, when measured at 25 feet.

Table 4.6.O: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Sources: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

The greatest vibration levels are anticipated to occur during the site preparation and grading phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured to the nearest off-site buildings because vibration impacts normally occur within the buildings.

The formula for vibration transmission is provided below:

$$L_vdB\ (D) = L_vdB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Table 4.6.P shows the expected typical construction equipment vibration levels at the nearest receiver locations.

[8] Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*. FTA Report No. 0123. September. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed December 2022).

Table 4.6.P: Typical Construction Equipment Vibration Levels

Receiver Location	Distance to Construction Activity (feet)	Receiver Vibration Levels (VdB) – Highest Vibration Levels	Threshold (VdB)	Threshold Exceeded?
R1	230	58.1	78	No
R2	161	62.7	78	No
R3	296	54.8	78	No
R4	81	71.7	78	No
R5	27	86.0	78	Yes
R6	17	92.0	78	Yes
R7	81	71.7	78	No
R8	28	85.5	78	Yes
R9	29	85.1	78	Yes
R10	12	96.6	78	Yes

Source: *Villa Serena Noise Assessment* (Urban Crossroads 2023b).
VdB = vibration velocity decibels

Vibration from construction activities at the project site would exceed the maximum acceptable vibration for daytime residential uses. As shown in **Table 4.6.P**, at distances ranging from 12 feet to 296 feet from typical project construction activities (at the project site boundary), construction vibration levels are estimated to range from 54.8 to 96.6 VdB and will exceed the FTA Transit Noise and Vibration Impact Assessment Manual maximum acceptable vibration criteria of 78 VdB for daytime residential uses at receivers located within 50 feet of the project site boundary. As these levels exceed the criteria, this is a potentially significant impact; therefore, implementation of the following mitigation measure would be required to reduce potential construction-period vibration impacts.

Mitigation Measure NOI-1: **Vibration Reduction.** During all construction-related activities, the project applicant shall not use large, loaded trucks or heavy mobile equipment greater than 80,000 pounds within 50 feet of occupied residences. Instead, small rubber-tired or alternative equipment, as well as soil compaction equipment shall be used during project construction to reduce vibration effects on nearby structures and their occupants. The City of Upland Community Development Services Director, of their designee, shall ensure this prohibition has been included in the plan set prior to the issuance of any construction-related permits.

Implementation of **Mitigation Measure NOI-1** would establish a minimum of a 50-foot buffer between any large equipment and existing residential uses. This buffer would ensure that vibration levels at surrounding residential uses would be below 78 VdB, which would reduce vibration-related impacts to a **less than significant** level.

Threshold NOI-3: Airport Noise. The nearest airport to the project site is Cable Airport, which is located approximately 2.6 miles west of the project site. Based on the Cable Airport Land Use Compatibility Plan (ALUCP), the project site is located outside of the airport's compatibility zones,

airspace protection zones, allowable object height zones, and noise impact areas.[9] Therefore, the proposed project would not expose people residing or working in the Project area to excessive noise levels from aircraft-related operations. **No impact** would occur, and no mitigation measures are required.

4.6.3 Cumulative Impacts

The cumulative area for noise impacts is the City of Upland. Construction crew commutes and the transport of construction equipment and materials to the site for the project would incrementally increase noise levels on roadways leading to the project site. Secondary sources of noise would include noise generated during site preparation, grading, building construction, paving, and architectural coating phases of construction on the project site. The net increase in project site noise levels generated by these activities and other sources has been quantitatively estimated. Although it is not possible to predict if contiguous or nearby properties may be constructed at the same time and create cumulative noise impacts that would be greater than if developed at separate times, it is unlikely that adjacent properties will be developed at the same time as the project site. However, in the unlikely event that adjacent properties are developed at the same time as the proposed project, adherence to the City's Municipal Code that regulate the timing of construction activities would render the cumulative construction noise impacts **less than significant**.

Operational noise resulting from occupation of the project site would be typical of that experienced in similar residential development. On-site operational noises are individual noise occurrences and are not typically additive in nature. It is extremely unlikely that adjacent properties will generate noises that would be additive in nature because of two important reasons. First, the noise sources would have to be adjacent or in close proximity to one another in order for the noises to intermingle and become cumulative. Second, the sensitive receptor or receptors would also have to be adjacent to or in close proximity to the noise generators. It is not possible to predict with reasonable certainty if cumulative development in the project would generate noise at the same time and location(s) sufficient to create significant cumulative noise impact at sensitive receptors. Increasing traffic on roadways in the project vicinity will cumulatively increase traffic noise in the project area, which will increase the potential for cumulatively significant noise levels at new and existing development. It is reasonable to conclude that each separate project will be required to identify and mitigate noise such that exterior and interior noise levels do not exceed established City standards at any noise-sensitive use. Adherence to standard City provisions that regulate noise and implementation of project-specific mitigation for the proposed development as well as other identified cumulative projects would ensure that cumulative long-term noise impacts remain **less than significant**.

[9] City of Upland. 2015h. *Cable Airport Land Use Compatibility Plan*. Website: https://www.uplandca.gov/uploads/ftp/city_departments/development_services/planning/cable_airport_land_use_comp_plan/pdfs/CCB.Front%20Body.2015-11-09.pdf (accessed June 20, 2022).

4.7 TRANSPORTATION

This section provides a discussion of the existing transportation conditions in the region, Upland, and in the vicinity of the proposed project. In addition, this section addresses potential impacts to transportation facilities resulting from construction and operation of the proposed project. This section also summarizes information provided in the Villa Serena Specific Plan Traffic Analysis (Traffic Analysis)[1] and Villa Serena Vehicle Miles Traveled (VMT) Screening Evaluation[2] prepared for the proposed project, which are included as Appendices G-1 and G-2, respectively. This section also incorporates data and information from the City of Upland's (City) General Plan, a review of existing resources and technical data, and applicable laws, regulations and guidelines.

Up until July 1, 2020, roadway congestion or level of service (LOS) was used as the primary metric for planning and environmental review purposes in Upland. However, Senate Bill (SB) 743 required the Governor's Office of Planning and Research (OPR) to establish a new metric for identifying and mitigating transportation impacts under the California Environmental Quality Act (CEQA) in an effort to meet the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. CEQA Section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts pursuant to CEQA Section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. OPR identified VMT as the required CEQA transportation metric for determining potentially significant environmental impacts.[3] In December 2018, the California Natural Resources Agency certified and adopted the State CEQA Guidelines update package, including the section implementing SB 743 (State CEQA Guidelines Section 15064.3). OPR developed the Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[4] As of July 1, 2020, VMT (not LOS) is the only legally acceptable threshold for transportation-related environmental impacts pursuant to CEQA.

In accordance with SB 743, for purposes of determining potentially significant environmental impacts related to transportation, this analysis focuses only on VMT as the threshold of significance. LOS is still used by the City's General Plan for local planning purposes; thus, LOS consistency is briefly discussed under Threshold 4.7-1 in this section. Further discussion on LOS analysis can be referenced in the project Traffic Analysis in Appendix G-1.

4.7.1 Setting

The project site is currently vacant and consists of part of the existing 15th Street flood control basin. The areas surrounding the project site include of a mix of land uses, including residential and

1 Urban Crossroads. 2024. *Villa Serena Specific Plan (Tract 20245)*. April 23.
2 Urban Crossroads. 2022. *Villa Serena Vehicle Miles Traveled (VMT) Screening Evaluation.* July 20.
3 Governor's Office of Planning and Research (OPR). 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013)*. January 20.
4 OPR. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* December 18. Website: opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf (accessed April 2023).

recreation, including the Upland Hills Country Club. The project site is bounded by West 15th Street to the south, which does not currently provide a direct connection to Campus Avenue west of the site. Smaller residential streets (i.e., Fernando Avenue and 13th Avenue) connect to 15th Street from 14th Street to the south.

4.7.1.1 Existing Transportation and Circulation System

Roadway Network. Roadway classifications and planned (ultimate) roadway cross-sections within the City are identified in the City's General Plan Circulation Element. Roadways within the vicinity of the site are described below.

- **16th Street** is a secondary arterial that extends east-west through the City and also traverses the adjacent cities of Claremont and Rancho Cucamonga. It is a four-lane divided roadway with a right-of-way width of 60 feet and posted speed-limit of 45 miles per hour. Parking is not permitted on either side of this roadway. 16th Street is located 0.22 miles north of the project site.

- **Campus Avenue** is a secondary arterial that extends north-south from the southern City limits to 24th Street. It has one lane in each direction north of State Route 210 and two lanes in each direction south of State Route 210. The posted speed limit varies between 35 to 40 miles per hour. Campus Avenue is located 0.28 miles west of the project site.

- **15th Street** and the connecting roadways south of the project site are local streets that connect to collectors and secondary arterials. They carry limited through-traffic and do not post speed limits greater than 25 miles per hour. 15th Street abuts the southern boundary of the project site.

Truck Network. The City has a specific City Ordinance (No. 1540) relating to truck routes. The ordinance defines weight restrictions, specifies the ability of trucks to enter areas not designated as truck routes, and defines truck routes within the City. The portions of 16th Street and Campus Avenue closest to the project site allow unrestricted access (weight limit per Vehicle Code). 15th Street to the west of Campus Avenue and 14th Street restrict truck weight to five tons for access.

Pedestrian Facilities. Pedestrian facilities are comprised of sidewalks, off-street pathways, marked and enhanced crosswalks (mid-block and at intersections), curb ramps, median refuges, and pedestrian scale lighting. There is no sidewalk abutting the southern project site boundary, and sidewalks only currently exist on the opposite side of 15th Street.[5] The existing 15th Street sidewalk across the project site is not contiguous with the existing sidewalks at the Campus Avenue/15th Street intersection to the west.

Bicycle Facilities. The City's General Plan Circulation Element defines three types of bicycle facilities some of which are present within the vicinity of the site:

[5] Urban Crossroads. 2024. *Villa Serena Specific Plan (Tract 20245) Traffic Analysis*. P. 22. Exhibit 3-5: Existing Pedestrian Facilities.

- **Class I** facilities provide a separate right-of-way, are designated for the exclusive use of bicycles and pedestrians and minimize vehicle and pedestrian crossflow. There are no Class I facilities within proximity to the project site.

- **Class II** facilities are lanes for bicyclists generally adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Adjacent vehicle parking and vehicle/pedestrian crossflow are permitted where applicable. A Class II/Class III bicycle lane is maintained on 16th Street.

- **Class III** facilities are designated by signs or pavement markings for shared use with pedestrians or motor vehicles but have no separated bicycle right-of-way or lane striping. Campus Avenue is currently a Class III facility but is proposed to be upgraded to a Class II facility in the future.[6]

Transit. Transit service in the city is provided by Omnitrans, with existing bus service along Foothill Road (State Route 66) (and a portion of Campus Avenue south of Foothill Boulevard) via Omnitrans Route 66 and Route 86. The nearest Omnitrans bus stop is located at Foothill Boulevard and Campus Avenue, approximately 0.9 miles southwest of the project site. Transit service is reviewed and updated by Omnitrans periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate.

4.7.1.2 Analysis Scope and Methodology

Until July 1, 2020, roadway congestion or LOS was used as the primary study metric for planning and environmental review of development projects in California. However, SB 743 required the OPR to establish a new metric for identifying and mitigating transportation impacts pursuant to CEQA in an effort to meet the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. OPR identified VMT as the required CEQA transportation metric and beginning July 1, 2020, VMT (not LOS) is the only legally acceptable threshold for transportation-related environmental impacts pursuant to CEQA.

VMT is a measurement of the amount and distance that a person drives, accounting for the number of passengers within a vehicle. Many interdependent factors affect the amount and distance a person might drive. In particular, the type of built environment affects how many places a person can access within a given distance, time, and cost, using different ways of travel (e.g., private vehicle, public transit, bicycling, walking). Typically, low-density development located at great distances from other land uses and in areas with few alternatives to the private vehicle provides less access than a location with high density, mix of land uses, and numerous ways of travel. Therefore, low-density development typically generates more VMT per capita compared to a similarly sized development located in urban areas. In general, higher VMT areas are associated with more air pollution, including greenhouse gas emissions and energy usage, than lower VMT areas. VMT is

[6] Urban Crossroads. 2024. *Villa Serena Specific Plan (Tract 20245) Traffic Analysis*. Pg. 21. Exhibit 3-4: City of Upland General Plan Bike Network.

calculated by multiplying the number of trips generated by a project by the total distance of each of those trips.

Lead agencies have the discretion to set their own thresholds of significance with the goals of the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. The City of Upland has developed and adopted VMT methodologies and thresholds.[7]

The City's 2020 *TIA Guidelines* for VMT list standardized screening criteria for project-level VMT analyses that can be used to identify when a proposed land use development project would result in a less than significant impact, thereby eliminating the need to conduct a full VMT analysis. A land use project need only meet one of the screening criterions to result in a less than significant VMT impact. The City's VMT screening criteria described in its TIA Guidelines are listed below:

- Transit Priority Area (TPA) Screening
- Low VMT Area Screening
- Project Type Screening

4.7.1.3 Regulatory Framework

The following State and local transportation plans, policies, and regulations guide transportation planning in the City of Upland.

State Regulations. This section summarizes applicable State regulations guiding transportation planning in Upland.

Senate Bill 375. As a means to achieve the Statewide emission reduction goals set by Assembly Bill 32 ("The California Global Warming Solutions Act of 2006"), SB 375 ("The Sustainable Communities and Climate Protection Act of 2008") directs the California Air Resources Board (CARB) to set regional targets for reducing GHG emissions from cars and light trucks. Using the template provided by the State's Regional Blueprint program to accomplish this goal, SB 375 seeks to align transportation and land use planning to reduce VMT through modified land use patterns. There are five basic directives of the bill: (1) creation of regional targets for GHG emissions reduction tied to land use, (2) a requirement that regional planning agencies create a sustainable communities strategy (SCS) to meet those targets (or an Alternative Planning Strategy if the strategies in the SCS would not reach the target set by CARB), (3) a requirement that regional transportation funding decisions be consistent with the SCS, (4) a requirement that the Regional Housing Needs Allocation numbers for municipal general plan housing element updates must conform to the SCS, and (5) CEQA exemptions and streamlining for projects that conform to the SCS.

Senate Bill 743. Senate Bill (SB) 743 was signed into law in 2013 and fundamentally changed the way transportation impacts under CEQA are analyzed. It required the OPR to "prepare, develop,

[7] Fehr Peers. 2020. *City of Upland Traffic Impact Analysis Guidelines*. Website: https://www.uplandca.gov/vehicle-miles-traveled (accessed August 2023).

and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed revisions to the [CEQA] guidelines …establishing criteria for determining the significance of transportation impacts of projects" to "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

On December 28, 2018, the Natural Resources Agency adopted *State CEQA Guidelines* Section 15064.3, which establishes specific criteria for evaluating a project's transportation impacts and states that "vehicle miles traveled is the most appropriate measure of transportation impacts". It gives agencies the "discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure" provided that "[a]ny assumptions used to estimate vehicle miles traveled… should be documented and explained in the environmental document prepared for the project." Section 15064.3 further states that except for certain transportation projects, "a project's effect on automobile delay shall not constitute a significant environmental impact." See *Citizens for Positive Growth & Preservation v. City of Sacramento* (2019) 43 Cal. App. 5th 609, 626 (holding that a general plan's impact on LOS, which effectively measures automobile delay, can no longer constitute a significant environmental impact).

Additionally, OPR issued a technical advisory memorandum in December 2018 that includes general guidance and information for lead agencies to use in implementing SB 743, including choosing VMT methodology and establishing VMT thresholds. On August 10, 2020, the City Council approved Resolution No. 6564 adopting "Vehicle Miles Traveled" Baseline and Thresholds of Significance and Guidelines for the purposes of analyzing transportation impacts under CEQA.[8]

Regional Regulations. This section summarizes applicable regional regulations guiding transportation planning in Upland.

Southern California Association of Governments. SCAG conducts regional planning in Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial counties. SCAG is also the federally designated Metropolitan Planning Organization (MPO) for these six counties. As the designated MPO, SCAG is mandated by the federal government to research and prepare plans for transportation, a growth forecast, hazardous waste, and air quality. The growth forecast serves as the foundation of these plans.

On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy).[9] Connect SoCal is a long-range visioning plan that builds upon and expands land use and

[8] Fehr Peers. 2020. *City of Upland Traffic Impact Analysis Guidelines*. Website: https://www.uplandca.gov/vehicle-miles-traveled (accessed December 20, 2022).

[9] Southern California Association of Governments. 2020. *Connect SoCal: 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*. September 3. Website: https://scag.ca.gov/read-plan-adopted-final-connect-socal-2020 (accessed December 20, 2022).

transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable, and prosperous region by making connections between transportation networks, between planning strategies, and between the people whose collaboration can improve the quality of life for Southern Californians, including consideration of housing-jobs balance within the region. Connect SoCal was developed through a 4-year planning process involving rigorous technical analysis, extensive stakeholder engagement, and robust policy discussions with local elected leaders, who make up SCAG's policy committees and Regional Council. SCAG's leadership explored the challenges and barriers to the transformative change the region needs to address demographic and economic shifts, including an increasingly aging and economically inequitable society. SCAG's analysis considered both the physical constraints and economic barriers of continuing to grow rapidly on the fringes of the region. SCAG's policy committees reviewed and discussed emerging technologies and transportation innovations aimed at relieving congestion, while reducing emissions.

Local Regulations. This section summarizes applicable local regulations guiding transportation planning in Upland.

San Bernardino County Measure "I". In 2004, San Bernardino County approved the 30-year extension of Measure "I", a small sales tax on retail transactions through the year 2040 to fund transportation projects that include, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure "I" extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. Although Measure "I" is a self-executing sales tax administered by the San Bernardino County Transportation Authority (SBCTA), funds from Measure "I" have funded in the past and will continue to fund new transportation facilities in San Bernardino County, including the City of Upland.

City of Upland Development Impact Fee (DIF) Program. The City adopted their latest update to their DIF program in November 2017. Fees from new residential, commercial, and industrial development are collected to fund Measure "I" compliant regional facilities as well as local facilities. Under the City's DIF program, the City may grant to developers a credit against specific fee components when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

After the City's DIF fees are collected, they are placed in a separate restricted use account pursuant to the requirements of Government Code Sections 66000 *et seq*. The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Engineering Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are periodically performed by City staff and consultants. The City uses this data to determine the timing of the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS fall below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds. The City's DIF program establishes a timeline to fund, design, and build the improvements.

City of Upland General Plan. The City General Plan Circulation Element provides the following goals and policies pertaining to transportation and traffic that would be applicable to the proposed project:

- **Goal CIR-1:** A transportation network that provides mobility and access for all modes of travel including automobiles, transit, bicyclists, pedestrians, and freight vehicles.
    - **Policy CIR-1.1c:** Require the City's Roadways to strive to maintain LOS D at all intersections outside of the Downtown Specific Plan area and the Transit Priority Roadways except where such improvements are physically infeasible or would negatively impact bicyclists, pedestrians, or transit patrons.
    - **Policy CIR-1.5:** Require future development or redevelopment to disclose intersection traffic impacts in the City or adjacent jurisdictions as identified through the CEQA process and mitigate impacts where such mitigation measures are physically feasible. These shall be required to contribute to the implementation of mitigation measures, including but not limited to those identified in the General Plan EIR, by the payment of fair share costs, constructing the required improvement, providing right-of-way, or other actions as required by the City.

4.7.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to transportation that could result from implementation of the proposed project. The section begins with significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.7.2.1 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the CEQA Guidelines. Based on these thresholds, implementation of the proposed project would have a significant impact related to transportation if:

Threshold TRA-1: The proposed project would conflict with a program, plan, ordinance or policy addressing the circulation system including transit, roadway, bicycle and pedestrian facilities.

Threshold TRA-2: The proposed project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Threshold TRA-3: The proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Threshold TRA-4: The proposed project would result in inadequate emergency access.

To apply the significance criteria listed above, the analysis in this section uses the following significance thresholds, which are based on federal, State, and local regulations.

Threshold TRA-1. The following thresholds are used to determine whether the proposed project would conflict with an applicable plan, ordinance, or policy, including the congestion management program.

Transit. Conflicts with a program, plan, ordinance, or policy related to transit would be considered significant if the project would:

1. Disrupt existing transit services or facilities. This includes disruptions caused by project access points or staging areas near streets used by transit and transit stops/shelters; or

2. Interfere with planned transit services or facilities; or

3. Conflict or create inconsistencies with adopted transit system plans, guidelines, policies, or standards.

Roadway System. Per SB 743, transportation impacts related to vehicle delay or LOS are no longer considered significant environmental impacts. Therefore, the following criterion related to intersections is discussed for consistent with General Plan Policy CIR-1.1c. Intersection effects would be inconsistent with the standards set for the in the General Plan if the project would cause an intersection operating at an acceptable level of service (LOS A-D) to deteriorate to an unacceptable level (LOS E-F) with the addition of project trips.

Bicycle and Pedestrian Facilities. Conflicts with a program, plan, ordinance, or policy related to bicycle and pedestrian facilities would be considered significant if the project would:

1. Disrupt existing or planned bicycle or pedestrian facilities; or

2. Create inconsistencies with adopted bicycle or pedestrian system plans, guidelines, or policy standards.

Threshold TRA-2. The following threshold is used to determine whether the proposed project would exceed the applicable VMT threshold of significance.

VMT. The proposed project would result in a significant project-generated VMT impact if either of the following conditions occur:

1. The baseline project-generated VMT per service population exceeds the City of Upland General Plan Buildout VMT per service population; or

2. The cumulative project-generated VMT service population exceeds the City of Upland General Plan Buildout VMT per service population.

Threshold TRA-3. The following threshold is used to determine whether the proposed project would substantially increase hazards due to a design feature or incompatible uses.

Hazards. Impacts related to hazards would be considered significant if the project would:

1. Substantially increase hazards due to a geometric design feature; or
2. Result in an incompatible land use.

Threshold TRA-4. The following threshold is used to determine whether the proposed project would conflict or create inconsistencies with adopted transit system plans, guidelines, policies, or standards.

Emergency Access. Impacts related to emergency access would be considered significant if the project would:

1. Limit emergency vehicle access routes or roadway facilities; or
2. Create a project site that is inaccessible to emergency vehicles.

4.7.2.2 Proposed Project

As described in Section 3.0, Project Description, of this EIR, development of the proposed project would result in the construction of 65 single-family residences as well as roadway improvements along East 15th Street. Trip generation was estimated for the proposed project using the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition) and other applicable sources used to prepare the project Traffic Analysis and VMT Screening Evaluation. The proposed project is anticipated to generate 614 two-way trips daily with 46 AM peak hour trips and 61 PM peak hour trips.

4.7.2.3 Project Impacts

Threshold TRA-1: Conflict with a Program, Plan, Ordinance, or Policy. The following section analyzes impacts related to conflicts with programs, plans, ordinances, or policies during both construction and operation.

Construction. It is anticipated that construction equipment and vehicles would be staged on site. The proposed project would require temporary lane closures on 15th Street to allow for utility connections and improvements within the public right-of-way. The proposed project does not include any characteristics (e.g., permanent road closure or long-term blocking of road access) that would physically impair or otherwise interfere with transit, roadways, bicycle facilities, and/or pedestrian facilities in the project vicinity, and project construction would last for approximately 24 months. The site-specific construction fleet would vary due to actual construction needs, but construction vehicle trips would derive from construction workers, vendor deliveries, and material hauling.

It is anticipated that the proposed project would require an import of 41,000 cubic yards of soil to balance cut and fill of the site and basin modifications. The delivery and removal of heavy equipment would occur outside of the morning and evening peak hours in order to have nominal impacts to traffic and circulation near the vicinity of the project.

During all phases of construction, construction trips would be greater than the number of trips associated with the project site in the existing condition. Although construction traffic would be less than traffic generated by project operation, the project would be required to adhere to all applicable City Municipal Codes and Ordinances, and would implement recommendations outlined in the California Manual on Uniform Traffic Control Devices[10] to reduce potential impacts on the local circulation system during project construction. The manual recommends early coordination with affected agencies to ensure that emergency vehicle access is maintained.

In addition to sidewalk improvements and curb cuts at project driveways and throughout the project footprint, the project would construct the following improvements to accommodate site access and maintain acceptable peak hour operations for the proposed project:

- **Coyote Run Drive West and 15th Street:** Construct Coyote Run Drive west as a private driveway to curve and connect with the new western alignment of 15th Street.

- **Fernando Ave and 15th Street:** A knuckle[11] would be installed on 15th Street at Fernando Avenue consistent with City standards.

- **Coyote Run Drive[12] East and 15th Street:** A stop control on the southbound approach of the future Coyote Run Drive East and 15th Street would be installed to implement a cross-street stop-controlled intersection with no-turn restrictions. The gated driveway would serve as a secondary access point to the development, allowing egress and emergency vehicle access only.

- **Western Alignment of 15th Street:** A new western alignment of 15th Street between the future Coyote Run Drive West and the existing western terminus of 15th Street (which is just east of Campus Avenue) would be constructed to accommodate two-way traffic, consistent with City standards. Improvements would include curb and gutter improvements to both sides and a sidewalk along the south side which would join with the existing sidewalk adjacent to the existing RV storage facility. Three speed tables are proposed along the new alignment of 15th Street as a traffic calming measure.

- **15th Street:** The project would also construct the ultimate half-section of 15th Street as a local roadway (66-foot right-of-way) along the project's frontage between Fernando Avenue and the project's eastern boundary consistent with City Standards. Frontage improvements include pavement, curb-and-gutter, sidewalk, and landscaping improvements. The proposed sidewalk on the north side of 15th Street would join the proposed sidewalk within the

[10] California Department of Transportation. 2023. California Manual on Uniform Traffic Control Devices (CA MUTCD). Website: https://dot.ca.gov/programs/safety-programs/camutcd (accessed September 2023).

[11] A street knuckle refers to an area where two streets meet in termination and the angle between the two centerlines of the streets range from 60 to 100 degrees.

[12] The street is labeled "Coyote Run Drive" on project plans, but the traffic study identifies "West" and "East" to identify the two points in which this street intersects with 15th Street so there is no confusion with the same street name.

project site to the existing sidewalk on Fernando Avenue. On-site traffic signing and striping would be implemented with the provisions of the California Manual on Uniform Traffic Control Devices[13] and in conjunction with detailed project construction plans. Sight distance at each project access point would be reviewed with respect to standard Caltrans and City of Upland sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

With the above construction details and anticipated improvements, construction of the project would not conflict with a program, plan, ordinance, or policy addressing the local circulation system during construction. Impacts would be **less than significant**, and no mitigation would be required.

Project Operation. The Study Area intersections, which include Campus Avenue at 14th, 15th, and 16th Street, and Coyote Run Drive at East and West 15th Street, currently operate at acceptable LOS during the AM peak hour and PM peak hour in the Existing Condition. The proposed project is anticipated to generate a total of approximately 614 two-way vehicle trips per day, with 46 AM peak hour trips and 61 PM peak hour trips. **Table 4.7.A** summarizes the intersection analysis results, which indicates that all intersections within the study area are anticipated to continue to operate at an acceptable LOS during peak hours with the addition of project traffic, which would not conflict with the City's Circulation Element Policy CIR-1.1c.

Table 4.7.A: Intersection Analysis for Opening Year Cumulative (2025) Conditions

Intersection	2025 Without Project				2025 With Project			
	Delay (seconds)		Level of Service		Delay (seconds)		Level of Service	
	AM	PM	AM	PM	AM	PM	AM	PM
Campus Ave & 16th St	27.9	51.2	C	D	28.1	52.2	C	D
Campus Ave & 15th St	11.5	11.8	B	B	11.5	11.8	B	B
Campus Ave & 14th St	10.3	8.8	B	A	10.9	9.1	B	A
Coyote Run Dr. West & 15th St	Future intersection				0	0	A	A
Coyote Run Dr. East & 15th St	Future Intersection				8.6	8.6	A	A

Source: *Villa Serena Specific Plan (Tract 20245) Traffic Analysis*, page 38 (Urban Crossroads 2024).

The proposed project includes improvements to the public right-of-way along 15th Street that would enhance the pedestrian/non-motorized travel environment, such as landscaping to provide a barrier between roadway traffic, and improvements to safety and ADA accessibility. The proposed project would provide pedestrian and non-motorized travel crossings at all project driveways. The project site's internal circulation system would include similar improvements that would integrate pedestrian and non-motorized travelers with vehicular traffic. Therefore, the project is not anticipated to conflict with any program, plan, ordinance or policy addressing transit, bicycle, and pedestrian facilities.

[13] California Department of Transportation. 2023. California Manual on Uniform Traffic Control Devices (CA MUTCD). Website: https://dot.ca.gov/programs/safety-programs/camutcd (accessed September 2023).

Vehicular access to the project site would be provided via two gated driveways from 15th Street, the primary ingress and egress driveway at the western boundary of the project site via the future new alignment of 15th Street from Coyote Run Drive West to Campus Avenue , and an egress/emergency vehicle access (EVA) only gated driveway to 15th Street east of Coyote Run Drive East. Although no bike lanes are included as part of the proposed project, the project would not interfere with access to existing Class II and Class III bike lanes on Campus Avenue and 16th Street, and the project driveways would not disrupt non-vehicular (i.e., pedestrian and bicycle) circulation within the project area. Landscaping would be installed along the 15th Street frontage to improve walkability and pedestrian safety along this roadway. These improvements are consistent with the goals and standards of the City's General Plan Circulation Element. For these reasons, the proposed project would not conflict with applicable provisions in the City's General Plan.

Conformance with SCAG's Connect SoCal. The SCAG RTP/SCS Connect SoCal 2020 goals are related to housing, transportation technologies, equity and resilience in order to adequately reflect the increasing importance of these topics in the region, and where possible, the goals have been developed to link to potential performance measures and targets. **Table 4.7.B** lists the 10 goals contained in the 2020 RTP/SCS and the project's relationship to these goals. The seven guiding policies contained in the 2020 RTP/SCS are geared more to the regional and sub-regional level; thus, the policies were not included for analysis.

The proposed project is also consistent with the SCAG RTP/SCS Connect SoCal 2020. The proposed project would provide roadway improvements within and adjacent to the project site, in addition to fair share payments into the City's DIF program for off-site regional transportation improvements.

Based on the above analysis presented in **Table 4.7.B**, operation of the proposed project would not conflict with a program, plan, ordinance, or policy addressing the local circulation system post-construction. Impacts would be **less than significant**, and no mitigation would be required.

Threshold TRA-2: VMT. As previously discussed above in **Section 4.7.2.3**, the City's TIA Guidelines for VMT list standardized screening criteria for project-level VMT analyses that can be used to identify when a proposed land use development project would result in a less than significant impact, thereby eliminating the need to conduct a full VMT analysis. A land use project need only meet one of the three screening criterions to result in a less than significant VMT impact. Per the City's TIA Guidelines, the proposed project was evaluated for VMT screening:[14]

[14] Urban Crossroads. July 20, 2022a. Op. cit.

Table 4.7.B: Project Specific Plan Consistency Analysis with the Connect SoCal 2020-2045 RTP/SCS

Connect SoCal Goal	Proposed Project Consistency Analysis
Goal 1: Encourage regional economic prosperity and global competitiveness.	**Consistent:** The proposed Project would serve as a long-range plan to guide the development for a residential, master-planned community in Upland, California. The proposed project would provide the area with needed housing, which would encourage regional economic prosperity.
Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.	**Consistent:** The proposed project includes roadway improvements to vehicular and non-vehicular circulation systems; thereby, providing and/or improving mobility, accessibility, reliability, and travel safety for people and goods within the project site and Upland.
Goal 3: Enhance the preservation, security, and resilience of the regional transportation system.	**Consistent:** The proposed project includes improvements to the existing circulation and infrastructure systems, which will build upon ongoing local and regional efforts to enhance the preservation, security, and resilience of the regional transportation system, both vehicular and nonvehicular.
Goal 4: Increase person and goods movement and travel choices within the transportation system.	**Not Applicable:** The proposed project is a residential development project and not a project that would increase movement and travel choices internally. However, the project site would connect to nearby pedestrian, bicycle, and transit facilities in the vicinity.
Goal 5: Reduce greenhouse gas emissions and improve air quality.	**Consistent:** The proposed project, through project design and regulatory compliance with local and regional standards, would comply with all applicable air quality regulations, utilize energy efficient equipment, and facilitate the use of alternative energy, to the extent feasible. Implementation of project features and improvements would contribute to the ongoing efforts to reduce greenhouse gas emissions and improving air quality. Per analysis presented in Section 4.2 Air Quality and Section 4.4 Greenhouse Gas Emissions, the proposed project would not result in significant impacts in both environmental resource areas.
Goal 6: Support healthy and equitable communities.	**Consistent:** The proposed project's circulation and frontage improvements would contribute to the development of a healthy and equitable community (City's Healthy Community Element Goal HC-1) and would not adversely impact existing and planned adjacent communities.
Goal 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	**Consistent:** The proposed project, through project design and compliance with local, State, and federal regulations that address climate change and resiliency, would contribute to local efforts and would complement the regional development pattern and transportation network through the development of an established community in Upland. The City released a final draft Climate Action Plan in September 2015 in accordance with CEQA Section 15183.5(a), which was designed so that the City's ongoing emission reduction efforts would coordinate with the State of California's strategies of reducing emissions.
Goal 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	**Not Applicable:** This goal is not applicable to the proposed project.
Goal 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**Not Applicable:** The proposed project is a master-planned community of 65 detached single-family homes. The project site is not located within a high-quality transit corridor (See **Section 4.7.6.2: VMT Impacts** below).
Goal 10: Promote conservation of natural and agricultural lands and restoration of habitats.	**Consistent:** The proposed project would implement **Mitigation Measures BIO-1 through BIO-4** which would contribute to local efforts of conserving natural and agricultural lands and habitat restoration. The remaining area of the 15th Street flood control basin, after proposed project modifications, may accommodate for biological resources and habitat. For additional information, please see **Section 4.3 Biological Resources**.

Source: Southern California Association of Governments. Compiled by LSA (2023).
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy

Transit Priority Area Screening. Per the City's TIA Guidelines, projects located within a Transit Priority Area may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the Lead Agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

The SBCTA's VMT Screening Tool was utilized to locate the project site and its proximity to a Transit Priority Area. The project site is not located within a half-mile of an existing major transit stop or along a high-quality transit corridor; thus, Transit Priority Area screening criteria is not met.

Low VMT Area Screening. Per the City's TIA Guidelines, residential and office projects that locate in areas with low VMT and that incorporate similar features (density, mix of uses, and transit accessibility) will tend to exhibit similarly low VMT.

A project may be presumed to have a less than significant VMT impact if located in an already low VMT generating traffic analysis zone (TAZ) that generates a VMT per service population that is less than the City' General Plan Building VMT per service population. The project's TAZs VMT per service population was compared to the City's adopted threshold of 35.3 VMT per service population. The project's TAZ 53656201 generates 31.4 VMT per service population, which is better than the City's adopted threshold Citywide average VMT per service population under buildout conditions. The project is located within a low VMT generating zone; thus, Low VMT Area screening criteria is met.

Project Type Screening. Per the City's *TIA Guidelines* (2020), local serving retail less than 50,000 square feet or other local essential services (i.e., day care centers, public schools, medical/dental office buildings, etc.) are presumed to have a less than significant impact absent substantial evidence to the contrary. The proposed project does not contain any local serving uses.

In addition, the City's *TIA Guidelines* (2020) state that small projects generating fewer than 250 daily vehicle trips may be presumed to have a less than significant impact, subject to discretionary approval by the City. As previously discussed above in **Section 4.7.2.1**, the project is anticipated to generate 614 daily vehicle trips; therefore, the proposed project does not meet the Project Type screening criteria.

The proposed project was found to meet Low VMT Area screening criteria, per the project's VMT Screening Evaluation.[15] As one of the three screening criteria for VMT was met, the project would not conflict or be inconsistent with State *CEQA Guidelines* Section 15064.3, subdivision (b). Impacts would be **less than significant**, and no mitigation measures are required.

Threshold TRA-3: Transportation Hazards. The following section analyzes transportation hazards during construction and operation of the proposed project.

Construction. Development of the proposed project would require site preparation; delivery of materials, equipment, and personnel; undergrounding of utilities and connections to existing infrastructure in 15th Street; construction of the buildings; and installation of circulation and landscaping improvements. Grading and building activities would involve the use of standard earthmoving equipment (e.g., loaders, bulldozers, cranes, and other related equipment). All construction equipment, including construction worker vehicles, would be staged on the project site for the duration of the construction period. Construction workers are anticipated to drive standard vehicles that would not result in incompatible uses to the surrounding residential land uses. Therefore, project construction is not anticipated to result in incompatible uses that increase on-road hazards. Impacts would be **less than significant**, and no mitigation is required.

Operation. The design of the project's circulation system does not include any sharp curves or dangerous intersections. Roadway improvements in and around the project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control, site access requirements, and internal circulation. As part of the City's standard plan check process, the final design of all roadways, intersections, and circulation within and adjacent to the project site would be reviewed by and subject to approval by City staff prior to issuance (as relevant) of any grading, construction, or occupancy permit, which would preclude uses that are incompatible with existing on-site or adjacent development. The review and approval by City staff sufficiently ensures the project would incorporate the necessary design features to provide safe travel to, from, and within the project site. As previously discussed, streets within the project site include curb cuts at intersections to both visually enhance the intersection, to promote pedestrian safety, and to accommodate non-motorized travelers. Therefore, project operation is not anticipated to result in incompatible uses or hazardous geometric design features. Impacts would be **less than significant**, and no mitigation is required.

Threshold TRA-4: Emergency Access. The project site is not located within a very high fire hazard severity area.[16,17] The project would be designed, constructed, and maintained to provide required emergency/evacuation access per City standards. As part of the development process, project plans would be submitted to City law enforcement, fire protection, and/or other emergency service providers (as appropriate) for review and approval prior to the issuance of building permits.

15 Urban Crossroads. 2022b. Op. cit.

16 RBF Consulting. 2015. City of Upland Final Program EIR. Page 5.14-21.

17 CAL FIRE. FRAP, Fire Hazard Severity Zones in LRA San Bernardino County. Website: https://egis.fire.ca.gov/FHSZ/ (accessed January 3, 2023).

Construction. Construction activities may have a temporary effect on existing traffic circulation patterns by requiring partial lane closures during street improvements and utility installation or by increasing emergency vehicle response times. As previously discussed, the project would adhere to the recommendations outlined in the California Manual on Uniform Traffic Control Devices to reduce potential impacts on the local circulation system during project construction. Recommendations would be implemented by the construction contractor to ensure that emergency vehicles would be able to navigate through the streets adjacent to the project site that may experience congestion due to construction activities. All emergency access to the project site and adjacent areas would be kept clear and unobstructed during all phases of demolition and construction. If a partial street closure (i.e., a lane closure) would be required, notice would be provided to the City of Upland Police Department and/or Fire Department, and flag persons would be used to facilitate traffic flow until construction is complete.

Operation. Traffic associated with project operation would utilize existing and improved roadways within the vicinity of the project site and within the project site. As no significant impacts to any study area intersections have been identified, it is anticipated that all intersections within the project vicinity would continue to operate at an acceptable LOS during all traffic conditions. The *City's General Plan* does not identify specific evacuation routes in the event of a disaster or emergency event. It is assumed that Major and Secondary Arterial roadways within the project vicinity and City would function as evacuation routes and/or emergency vehicle and responder access routes during the event of an emergency. Upon completion of the proposed project, the available evacuation routes for project occupants and guests would include:

- **Egress to the West Via 15th Street and Campus Avenue from Coyote Run Drive West:** This is the primary project access point from Campus Avenue, a secondary arterial that provides greater regional access and connects with SR-210 approximately 1.1 miles north of the project site. SR-210 offers travel options to the east or west into Los Angeles or San Bernardino counties.

- **Egress South Via Local Streets from Coyote Run Drive East/15th Street:** This secondary project access driveway along 15th Street is egress/EVA only and would provide an evacuation route via local streets that connect to Campus Avenue to the west or Foothill Boulevard to the south.

All on-site roadways, driveways, and parking spaces would comply with Section 18.56.130, Vehicle Access and Parking Requirements, in the City's Municipal Code. All project access driveways are proposed to be gated driveways; however, emergency response services would be provided access means to both driveways and during evacuation events. Additionally, all project driveways and internal streets would be constructed to comply with minimum dimension and clearance standards as required by the City Fire Department. Therefore, operation of the proposed project would not result in inadequate emergency access. Impacts would be **less than significant**, and no mitigation measures are required.

4.7.2.4 Cumulative Impacts

As defined in the *CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probably future projects. A cumulative project list was developed through consultation with planning and engineering staff from the City of Upland. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic (i.e., 50 or more peak-hour trips) to the study area intersections identified in the Traffic Analysis plus an ambient growth factor of 6.12 percent.[18]

All study area intersections are anticipated to operate at an acceptable LOS under Cumulative with project Traffic volumes. Given the distance between the proposed project site and cumulative project sites, impacts associated with design hazards, emergency access, or conflicts with adopted policies, plans, or programs supporting alternative transportation would not combine to create impacts over and above those associated with the proposed project. The proposed project would not have a cumulatively considerable impact related to transportation. No mitigation is required.

Construction and operation of the proposed project would not conflict with transportation programs, plans or policies that address the local circulation system. As shown in **Table 4.7.B**, the proposed project would not conflict with the policies and goals identified in the City's Circulation Element and the SCAG Connect SoCal. The project would not conflict with CEQA Guidelines section 15064.3, subdivision (b) as the project would not result in VMT impacts. The project would not result in transportation hazards related to geometric design and incompatible land uses, as the project would be similar to the surrounding residential land use and circulation system. The project would not result in inadequate emergency access as the site is accessible from two driveways via secondary arterials and local streets. Therefore, the proposed project would not have a cumulatively considerable impact on transportation and traffic resources and this impact would be **less than significant**.

[18] Urban Crossroads. 2024. *Villa Serena Specific Plan (Tract 20245) Traffic Analysis*.

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4.8 TRIBAL CULTURAL RESOURCES

This section of the Environmental Impact Report (EIR) evaluates the potential for the project to impact tribal resources in Upland. This section discusses the existing tribal cultural resource environment and sets forth the relevant regulatory requirements that apply to the analysis of the Development project's impacts on tribal cultural resources. According to California Public Resources Code (PRC) Section 21074 and Chapter 532, Statutes 2014 (i.e., Assembly Bill 52), "tribal cultural resources" are defined as:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources; or (B) included in a local register of historical resources as defined in subdivision (k) of [PRC] Section 5020.1.

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of [PRC] Section 5024.1.

4.8.1 Existing Environmental Setting

4.8.1.1 Local Pre-Contact History[1]

The native people of Southern California (north of a line from Agua Hedionda to Lake Henshaw in San Diego County) spoke Takic languages that form a branch or subfamily of the Uto-Aztecan language family. The Takic languages are divided into the Gabrielino-Fernandeño language, the Serrano-Kitanemuk group (the Serrano [includes the Vanyume or Desert Serrano dialect] and Kitanemuk languages), the Tataviam language, and the Cupan group (the Luiseño-Juaneño language, the Cahuilla Language, and the Cupeño language), Takic speakers occupied the southern San Joaquin Valley before 3,500 before present (BP). Perhaps as a result of the arrival of Yokutsan speakers (a language in the Penutian language family) from the north, Takic speakers moved southeast. The ancestors of the Kitanemuk moved into the Tehachapi Mountains and the ancestors of the Tataviam moved into the upper Santa Clara River drainage. The ancestors of the Gabrielino (Tongva) moved into the Los Angeles Basin about 3,500 BP replacing the native Hokan speakers. Speakers of proto-Gabrielino reached the southern Channel Islands by 3,200 BP.

The material culture of the ancestors of the Gabrielino is termed the Del Rey Tradition (3,500 to 150 BP). With the arrival of the Takic speakers, settlement and subsistence systems changed.

Mobility was greatly decreased compared to the Encinitas Tradition and small groups of related people lived in semi-permanent residential bases near a water source. Subsistence changed from a mobile foraging pattern to a collector pattern (Binford 1980). People collected resources and brought them back to the residential base. When away from the residential base people stayed overnight in temporary camps.

[1] ECORP. 2023. *Archeological Resources Inventory Report for the Villa Serena Project, San Bernardino County, California*. March.

Six phases have been defined on the mainland (Angeles I – Angeles VI) and four phases (Island I – Island IV) have been defined on the southern Channel Islands for the Del Rey Tradition. Angeles I, II, and III (3,500 to 1,250 BP) correspond with the Intermediate Horizon. During this period mortars and pestles were first used which probably indicates the beginning of acorn exploitation. Acorns required greater processing time but were storable and contributed to a greater degree of sedentism. Lithic technology was more focused on making flake tools, rather than core tools. Large projectile points, including Elko points, indicate that hunting was probably still accomplished with the *atlatl* or spear thrower.

Angeles IV, V, and VI (1,250 to 150 BP) correspond with the Late Prehistoric Horizon. The complex hunter-gatherer cultures encountered by the Spaniards in southern California developed during the Late Prehistoric Period. People lived in villages of up to 250 people located near permanent water and a variety of food sources. Each village was typically located at the center of a defended territory from which resources for the group were gathered. Small groups left the village for short periods of time to hunt, fish, and gather plant foods. While away from the village, they established temporary camps and created locations where food and other materials were processed. Archaeologically, such locations are evidenced by manos and metates for seed grinding, bedrock mortars for acorn pulverizing, and lithic scatters indicating manufacturing or maintenance of stone tools (usually made of chert) used in hunting or butchering. Overnight stays in field camps are evidenced by fire affected rock used in hearths.

The beginning of Angeles IV is marked by the introduction of the bow and arrow, which made deer hunting more efficient. The bow and arrow was also used in wars for territorial defense. One of the most important food resources for inland groups was acorns gathered from oak groves in canyons, drainages, and foothills. Acorn processing was labor intensive, requiring grinding in a mortar and leaching with water to remove tannic acid. Many of the mortars are bedrock mortars. Seeds from sage and grasses, goosefoot, and California buckwheat were collected and ground into meal with manos and metates. Seeds were used as the storable staple in areas which lacked acorn-producing oak groves. Protein was supplied through the meat of deer, rabbits, and other animals, hunted with bow and arrow or trapped using snares, nets, and deadfalls. On the coast fish were obtained using shell fishhooks and nets. Trade among local groups and inland and coastal groups was important as a means of obtaining resources from outside the local group's territory. Items traded over long distances included obsidian from the Obsidian Butte source in Imperial County and from the Coso source in Inyo County, steatite bowls and ornaments from Catalina Island, shell beads and ornaments from the Santa Barbara Channel area, rabbit skins and deer hides from the interior, and dried fish and shellfish from the coast. Acorns, seeds, and other food resources were probably exchanged locally.

4.8.1.2 Ethnography

Ethnogrpahic accounts of Native Americans indicate that the Gabrieliño (also known as Gabrieleno, or Tongva) once occupied the region that encompasses the project area. At the time of contact with Europeans, the Gabrieliño were the main occupants of the southern Channel Islands, the Los Angeles Basin, much of Orange County, and extended as far east as the western San Bernardino Valley. The term Gabrieliño came from the group's association with Mission San Gabriel Arcángel, established in 1771. The Gabrieliño are believed to have been one of the most populous and

wealthy Native American tribes in Southern California prior to European contact and spoke a Takic language. The Takic group of languages is part of the Uto-Aztecan language family.

The Gabrieliño occupied villages located along rivers and at the mouths of canyons. Populations ranged from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. Gabrieliño society was organized by kinship groups, with each group composed of several related families who together owned hunting and gathering territories. Settlement patterns varied according to the availability of floral and faunal resources. Vegetal staples consisted of acorns, chia, seeds, piñon nuts, sage, cacti, roots, and bulbs. Animals hunted included deer, antelope, coyote, rabbits, squirrels, rodents, birds, and snakes. The Gabrieliño also fished and collected marine shellfish. By the late 18th century, Gabrieliño population had significantly dwindled due to introduced European diseases and dietary deficiencies. Gabrieliño communities disintegrated as families were taken to the missions. However, current descendants of the Gabrieliño are preserving Gabrieliño culture.

4.8.2 Regulatory Setting

4.8.2.1 Federal Regulations

There are no federal regulations that are applicable to tribal cultural resources relevant to the project.

4.8.2.2 State Regulations

California Register of Historical Resources (PRC Section 5020 et seq.). State law also protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources in CEQA documents. A cultural resource is an important historical resource if it meets any of the criteria found in *CEQA Guidelines* Section 15064.5(a). These criteria are nearly identical to those for the NRHP, which are listed above.

The State Historic Preservation Officer (SHPO) maintains the CRHR. Properties listed, or formally designated eligible for listing, on the NRHP are nominated to the CRHR and then selected to be listed on the CRHR, as are State Landmarks and Points of Interest.

Per Section 5024.1(c), a resource may be listed as an historical resource in the California Register if it meets any of the following National Register of Historic Places criteria:

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

In addition to meeting one or more of the above criteria, the CRHR requires that sufficient time has passed since a resource's period of significance to "obtain a scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of time needed to develop the perspective to understand the resource's significance (California Code of Regulations [CCR] 4852[d][2]).

The CRHR also requires that a resource possess integrity, which is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (CCR 4852[c]). To retain integrity, a resource should have its original location, design, setting, materials, workmanship, feeling, and association. Which of these factors is most important depends on the particular criterion under which the resource is considered eligible for listing.

Senate Bill 18. SB 18, signed into law in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places through local land use planning. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting or mitigating impacts to cultural places. The consultation and notice requirements apply to adoption and amendment of both general plans (Government Code Section 65300 et seq.) and specific plans (Government Code Section 65450 et seq.). Specifically, Government Code Section 65352.3 requires local governments, prior to making a decision to adopt or amend a general plan, to consult with California Native American tribes identified by the NAHC for the purpose of protecting or mitigating impacts to cultural places. The NAHC is the State agency responsible for the protection of Native American burial and sacred sites.

Assembly Bill 52 Tribal Consultation. California PRC Section 21080.3.1 and Chapter 532, Statutes 2014 (i.e., AB 52), require that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. The bill requires a lead agency to begin consultation with each California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report is required for a project. The bill specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have a Notice of Preparation, or a notice of Negative Declaration or Mitigated Negative Declaration filed on or after July 1, 2015. By requiring the lead agency to consider these effects relative to tribal cultural resources and to conduct consultation with California Native American tribes, this bill imposes a State-mandated local program.

4.8.2.1 Regional Regulations

There are no regional regulations that are applicable to tribal cultural resources relevant to the project.

4.8.2.2 Local Regulations

There are no local regulations that are applicable to tribal cultural resources relevant to the project.

4.8.3 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to tribal cultural resources that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.8.3.1 Significance Criteria

The City has not established local CEQA significance thresholds for this impact area as described in Section 15064.7 of the *CEQA Guidelines*. Therefore, significance determinations utilized in this section are from Appendix G of the *CEQA Guidelines*. According to Section XVII of Appendix G to the *State CEQA Guidelines*, the Development Project would result in a significant impact to tribal cultural resources if the project would:

Threshold TCR-1: **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**

Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

Threshold TCR-2: **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**

A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.8.3.2 Project Impacts

Threshold TCR-1: Substantial Adverse Change in the Significance of a Tribal Cultural Resource listed or eligible for listing.; and

Threshold TCR-2: Substantial Adverse Change in the Significance of a Tribal Cultural Resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant.

A records search for the property at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton on February 6, 2023. The purpose of the records search was to determine the extent of previous surveys within a 1-mile radius of the project site and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in San Bernardino County, the following historic references were also reviewed: Built Environment Resource Directory; Historic Property Data File for San Bernardino County); the National Register Information System); Office of Historic Preservation, California Historical Landmarks; California Points of Historical Interest; Directory of Properties in the Historical Resources Inventory; and *Historic Spots in California*. No resources located on any of these databases were identified within the project site.

Other references examined include a RealQuest Property Search and historic General Land Office land patent records (Bureau of Land Management 2023). Historic maps reviewed include:

- 1897 USGS *Cucamonga, California* topographic quadrangle map (1:1,000 scale).
- 1942 USGS *Ontario and Vicinity*, California topographic quadrangle map (1:31,680 scale).
- 1954 USGS *Ontario, California* topographic quadrangle map (1:24,000 scale).
- 1967 USGS *Ontario, California* topographic quadrangle map (1:24,000 scale).
- Historic aerial photographs taken in 1938, 1948, 1959, 1966, 1978, 1985, 1994, and 2010 were reviewed for indications of property usage and built environment.

No historic resources were identified from a review of these data sources.

The records search indicated 49 previous cultural resource investigations have been conducted within 1 mile of the project site, covering approximately 80 percent of the total area surrounding the property within the records search radius. Of the 49 studies, 3 overlap with the project site. The records search also determined that 37 previously recorded pre-contact and historic-era cultural resources are located within one mile of the project site. Of these, nine are believed to be associated with Native American occupation in the project vicinity and 28 are historic-era sites, associated with early buildings and structures including adobes, inns and restaurants, and citrus agriculture and early roads. None of these resources, neither American nor historic-era resources, were identified within the project site.

The Notice of Preparation (NOP) for the project was distributed for public review for a 30-day period extending from February 8 to March 8, 2022. The City subsequently extended the period of public review to March 17, 2022. Three tribal contacts provided comment to the NOP:

- **Gabrieleño Band of Mission Indians – Kizh Nation (February 17, 2022):** Stated general agreement with the project and requested consultation for any and all future projects when ground disturbance will be occurring within the project location.

- **Quechan Indian Tribe (February 23, 2022):** Stated the tribe had no comments on the project and, "…defer to the more local Tribes and support their decisions on the projects."

- **San Manuel Band of Mission Indians (March 9, 2022):** The tribe stated proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the tribe. However, due to the nature and location of the proposed project, and given the tribe's present state of knowledge, the tribe does not have any concerns with the project's implementation, as planned, at this time. The tribe further provided suggested language to mitigate for any potential impacts related to tribal cultural resources.

No public comments related to tribal cultural resources were made during the June 8, 2022 Public Scoping meeting.

A Sacred Lands File was conducted on January 30, 2023 through the Native American Heritage Commission. This search resulted in a negative indication for the presence of Native American cultural resources in the project area. The Native American Heritage Commission recommended Senate Bill 18 (SB18) notification to the following 17 Native American contact via United States Postal Service (return receipt) on June 28, 2023.

- Gabrieleño Band of Mission Indians – Kizh Nation[1]
- Gabrieleno/Tongva San Gabriel Band of Mission Indians[2]
- Gabrielino Tongva Indians of California Tribal Council[3]
- Gabrielino/Tongva Nation
- Gabrielino-Tongva Tribe
- Morongo Band of Mission Indians
- Morongo Band of Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- Yuhaaviatam of San Manuel Nation (formerly the San Manuel Band of Mission Indians)
- Santa Rosa Band of Cahuilla Indians
- Serrano Nation of Mission Indians
- Serrano Nation of Mission Indians
- Soboba Band of Luiseño Indians
- Soboba Band of Luiseño Indians

Pursuant to notification requirements of Assembly Bill 52 (AB52), the City separately notified the following Native American contacts of the project on June 28, 2023:

1 Duplicate consultation letters provided to Chairperson Salas per the NAHC contact list
2 Duplicate consultation letters provided to Chairperson Morales per the NAHC contact list.
3 Consultation letters to different parties at this this tribe per NAHC contact list.

- Gabrielleño Band of Mission Indians – Kizh Nation
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Yuhaaviatam of San Manuel Nation (formerly the San Manuel Band of Mission Indians)
- Torres Martinez Desert Cahuilla Indians

From these notification, the Gabrielleño Band of Mission Indians – Kizh Nation, and Yuhaaviatam of San Manuel Nation commenced formal consultation with the City on June 29, 2023 and July 18, 2023, respectively. No further consultation responses other Native American tribes or contacts have been received.

During consultation, both the Gabrielleño Band of Mission Indians – Kizh Nation, and Yuhaaviatam of San Manuel Nation both stated that the project site is within the ancestral territory and traditional use area of their respective tribes. Ground disturbance below existing current grade would be required to develop the proposed residential and ancillary uses, relocate existing drainage systems, construct the 15th Street extension, and modify the remaining portion of the basin to retain sufficient flood control capacity. A field survey of the project site was conducted on February 14, 2023. No archaeological resources were identified within the project site during either the records or search and field survey. Based on the field survey results, there is negative indication for the presence of Native American cultural resources in the project area. Due to the amount of heavy disturbance within the project site necessary to construct and maintain the existing basin and due to the negative survey results, there exists a low potential for buried pre-contact archaeological sites in the project site. Despite this low potential and the apparent absence of tribal cultural resource within the limits of the project site, as established during consultation, ground disturbance may potentially impact such resources that were previously undetected.

Implementation of Mitigation Measures TCR-1 through TCR-5 have been identified to address this ***potentially significant*** impact. Of note, Mitigation Measures TCR-1 through TCR-3 have been identified through consultation with the Gabrielleño Band of Mission Indians – Kizh Nation, while Mitigation Measures TCR-4 and TCR-5 have been identified through consultation with the Yuhaaviatam of San Manuel Nation.

Mitigation Measure TCR-1 **Retain a Native American Monitor Prior to Commencement of Ground Disturbance Activities**

a. The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

b. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

c. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project applicant/lead agency upon written request to the Tribe.

d. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

Mitigation Measure TCR-2 **Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial)**

a. Upon discovery of any Tribal Cultural Resource, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor and/or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic purposes.

Mitigation Measure TCR-3 **Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects**

a. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.

b. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource Code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed.

c. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).

d. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods.

e. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

The following measures have been identified to address consultation with the Yuhaaviatam of San Manuel Nation (YSMN):

Mitigation Measure TCR-4 The Yuhaaviatam of San Manuel Nation (YSMN) Cultural Resources Department shall be contacted, as detailed in Mitigation Measure CUL-1, of any pre-contact and/or historic-era cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide tribal input with regards to significance and treatment.

Should the find be deemed significant, as defined by CEQA (as amended, 2015), by a Monitoring and Treatment Plan (Plan) shall be created by qualified archaeologist, in coordination with YSMN. All subsequent finds shall be subject to the Plan. The Plan shall allow for a monitor to be present that represents YSMN for the remainder of the project, should YSMN elect to place a monitor on-site.

Mitigation Measure TCR-5 Any and all archaeological/cultural documents created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Lead Agency for dissemination to YSMN. The Lead Agency and/or applicant shall, in good faith, consult with YSMN throughout the life of the project.

Implementation of the stated mitigation measures will reduce potential impacts to tribal cultural resources to a **less than significant** level.

4.8.3 Cumulative Impacts

According to Section 15130 of the *State CEQA Guidelines*, cumulative impacts refer to incremental effects of an individual project when viewed in connection with the effects of past projects, current projects, and probable future projects. Cumulative impacts on cultural resources evaluate whether impacts of the project and cumulative projects, when taken as a whole, substantially diminish the number of historical or archaeological resources within the same or similar context or property type. Ground disturbance associated with the project and cumulative projects could potentially affect previously unidentified archaeological sites and/or associated human remains.

As with the project, cumulative projects have, are, or will be required to complete project-specific cultural resource assessments required under the applicable guidelines and requirements, and similar to the project, impacts on known or previously unknown cultural resources on adjacent sites would be required to be mitigated to less than significant levels with appropriate mitigation measures. Furthermore, consultation with interested tribal governments, including the implementation of measures to safeguard identified tribal cultural resources, is required prior to completion of the CEQA process on all projects. Completion of the consultation processes required under AB 52 and SB 18 and the incorporation of applicable measures as project-specific conditions or mitigation required for each cumulative project would ensure that potential cumulative impacts to tribal cultural resources remain less than significant.

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5.0 OTHER CEQA CONSIDERATIONS

As required by CEQA, this chapter discusses the types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; effects found not to be significant; and significant unavoidable effects.

5.1 GROWTH INDUCING IMPACTS

This section summarizes the project's potential growth-inducing impacts on the surrounding community. A project is typically considered growth-inducing if it would foster economic or population growth or the construction of additional housing; if it would remove obstacles to population growth or tax community services to the extent that the construction of new facilities would be necessary; or if it would encourage or facilitate other activities that cause significant environmental effects.[1] Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

The proposed project consists of the construction of 65 new single-family residential units, the extension of 15th Street, installation of ancillary improvements, and modification of a portion of the remaining 15th Street Flood Control Basin. Development of the proposed project would result in direct population growth within Upland, as it would include residential units. As discussed in Section 6.3.8 below, the proposed project would increase Upland's population by approximately 191 persons. As described in the Initial Study prepared for the proposed project (included in Appendix A-5), the Southern California Association of Governments (SCAG) estimates that there could be 81,700 people, 28,900 households, and 43,500 jobs in Upland by 2040. The proposed project's contribution to growth would represent a negligible amount of the future growth forecast in Upland (0.23 percent of the projected 2040 city population and 0.22 percent of the projected 2040 city households). The addition of 189 residents within Upland would result in population growth within the city; however, this additional population is consistent with the City, County, and regional (SCAG) growth projections.

Therefore, the proposed project would not induce substantial population growth in Upland that has not been previously planned for. Additionally, the proposed project would consist of redevelopment of an existing urbanized site and would not require the extension of utilities or roads into undeveloped areas or directly or indirectly lead to the development of greenfield sites. Due to the location of the project site and the presence of existing uses on and in the vicinity of the site, construction of the proposed project would not induce unplanned growth in the area. Therefore, the growth that would occur as a result of the proposed project would not be substantial or adverse.

5.2 SIGNIFICANT IRREVERSIBLE CHANGES

An EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of non-renewable

[1] *State CEQA Guidelines*, 2021. Section 15126.2(d).

resources, and secondary growth-inducing impacts that commit future generations to similar uses. CEQA suggests that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. Each of these three categories is further detailed below.

5.2.1 Changes in Land Use Which Commit Future Generations

The proposed project would allow for the development of an approximately 9.16acre portion of the 15th Street Flood Control Basin. As discussed in Section 3.0, Project Description, and Section 4.5, Hydrology and Water Quality, the City has determined that the 9.16-acre portion of the flood control basin comprising the project site is a surplus parcel. A portion of the basin directly adjacent to the residential development area would be modified to adequately accommodate flood control operations. The extreme eastern portion of the basin (the 4.29-acre 'conservation area') would be preserved in its current condition.

The project site and immediate area are surrounded by a mix of residential, recreational open space, and commercial uses. The proposed Specific Plan would be a comprehensive plan for development of residential and open space land uses and infrastructure improvements to serve the proposed residential development. The Specific Plan establishes the development regulations and design criteria for development of the proposed project. The Specific Plan also establishes the procedures and requirements enabling City review and approval of development of the project, thereby ensuring that the City's General Plan, as amended for the project site, is implemented. Because the project would occur on an infill site in which a variety of land uses may be considered under the General Plan and Municipal Code, and because in the future, the site could be rezoned, in which case at the end of the useful life of the project, the use could change, it would not commit future generations to a significant change in land use.

5.2.2 Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of a hazardous material, is anticipated with implementation of the proposed project. Compliance with federal, State, and local regulations, as outlined in Section 3.3.9, Hazards and Hazardous Materials of the Initial Study, would ensure that this potential impact would be reduced to a less-than-significant level. As such, no irreversible changes – such as those that might result from construction of a large-scale mining project, a hydroelectric dam project, or other industrial project – would result from development of the proposed project.

5.2.3 Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. As discussed in the Initial Study (Appendix B), the State Department of Conservation designates the site as "Urban and Built-Up Land," and the site is located in an urbanized area of Upland. Therefore, no existing agricultural lands would be converted to non-agricultural uses. In addition, the project site does not contain known mineral resources and does not serve as a mining reserve; thus, development of the proposed project would not result in the loss of access to mining reserves. Please refer to Sections 3.3.2 and 3.3.12 of the Initial Study included in Appendix A-5 for a discussion of impacts related to agricultural and mining resources, respectively.

Construction of the proposed project would require the use of energy, including energy produced from non-renewable resources. Energy consumption would also occur during the operational period of the proposed project. As discussed in Section 3.3.6, Energy, of the Initial Study, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. Additionally, the proposed project would not require the construction of major new lines to deliver energy or natural gas as these services are already provided in the area. Therefore, the proposed project would not result in a significant impact associated with the consumption of nonrenewable resources.

5.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental topics analyzed in Chapter 4, Setting, Impacts, and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts associated with development of the proposed project. As discussed in more detail in the Initial Study (Appendix A-5), which was used as a preliminary scoping tool, the following topics are not addressed in the detailed topical sections of this EIR because impacts related to these topics either would not occur or would be less than significant with implementation mitigation measures. A summary of the conclusions provided in the Initial Study analysis for each of the topics scoped out of the EIR is provided below.

5.3.1 Agricultural and Forestry Resources

The project site is classified as "Urban and Built-Up Land" by the State Department of Conservation. The project site is not used for agricultural production, nor does it support forestry resources. Therefore, there would be no impact to agricultural and forestry resources.

5.3.2 Cultural Resources

The project site does not contain any known historical resources. However, the proposed project could result in potentially significant impacts related to the accidental discovery of archaeological resources or human remain during site preparation activities. With implementation of Mitigation Measures CUL-1, these impacts would be reduced to a less-than-significant level. Mitigation Measure CUL-1 would ensure that potential impacts to previously unknown archaeological resources or human remains would be less than significant.

5.3.3 Energy

Energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources, and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level and because the proposed project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the 2022 Integrated Energy Policy Report.[2] Additionally, the proposed project would be constructed to CALGreen standards, which would help to reduce energy and natural gas consumption. The

[2] California Energy Commission. 2023. *2022 Integrated Energy Policy Report Update.* February 28.

proposed project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and not result in any irreversible or irretrievable commitments of energy. Therefore, potential impacts related to energy use would be less than significant.

5.3.4 Geology and Soils

The Initial Study determined that no Alquist-Priolo Earthquake Fault Zones have been mapped within the project site. Additionally, the Initial Study determined that implementation of Standard Condition G-1, which requires the project design to comply with the California Building Code, would ensure that potential impacts related to strong seismic ground shaking and seismic-related ground failure, including liquefaction and landsliding, would be less than significant. The Initial Study also determined that the project site would be susceptible due to the presence of Soboba stony loamy sand, which exhibits slight erosional tendencies. Implementation of Standard Condition G-1 would reduce this impact to a less-than-significant level. Additionally, Standard Condition G-1 would ensure that potential impacts related to unstable soils would remain less than significant. Implementation of Mitigation Measure GEO-1 would ensure that potential impacts of the proposed project to paleontological resources would be less than significant. Therefore, impacts related to geology and soils would be less than significant.

5.3.5 Hazards and Hazardous Materials

The Initial Study determined that the single-family residential uses included in the proposed project would not include the routine transport, use, or disposal of significant quantities of hazardous materials. The Phase I Environmental Site Assessment (ESA) prepared for the project did not identify any recognized environmental conditions that would result in reasonably foreseeable upset or accident conditions involving the release of hazardous materials. There are no existing or planned schools within 0.25 miles of the project site, and the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or within an airport land use plan. The proposed project would not substantially alter any adjacent roadways and therefore would not be expected to impair the function of nearby evacuation routes. The project site is not located within an area mapped as containing a wildland fire hazard and is surrounded by existing and planned development, further reducing the site's proximity to undeveloped wildland areas. Therefore, impacts related to hazards and hazardous materials would be less than significant.

5.3.6 Land Use and Planning

The Initial Study determined that the proposed project would not create any physical barriers to travel in the vicinity of the project site. The proposed project would include the development of single-family residential uses on an undeveloped site surrounded by existing residential uses. In addition, the proposed project would include an include an extension of 15th Street from the southwest corner of the project site to the terminus of East 15th Street and therefore would increase opportunities for vehicular and pedestrian access in the area. Therefore, the proposed project would not physically divide an established community. The Initial Study also determined that the proposed project with General Plan Land Use goals and policies which are designed to enhance community services, reduce air pollution, GHG emissions, and traffic congestion by promoting quality development, fostering land use compatibility, and balancing Upland's jobs-to-housing ratio. Therefore, impacts related to land use and planning would be less than significant.

5.3.7 Mineral Resources

The project site is located within an urban area on a developed site. Additionally, the California Geological Survey does not identify known mineral resources or mineral recovery sites within or adjacent to the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource of value to the region or residents of the State or the loss of availability of a locally-important mineral resource recovery site.

5.3.8 Population and Housing

The proposed project would not result in substantial unplanned for growth in the area, as the project would contribute to the overall number of housing units as contemplated under the General Plan buildout of Upland. Based on Upland's current average household size of 2.94 persons, the proposed project would increase the city's population by 191 persons. This growth would account for 0.23 percent of the projected 2040 City population and 0.22 percent of the projected 2040 households. The addition of 189 residents within Upland would result in population growth within Upland; however, this additional population is consistent with the City, County, and regional (SCAG) growth projections. The proposed project would not include the removal of any existing residential uses and therefore would not require the construction of replacement housing elsewhere. Therefore, impacts related to population and housing would be less than significant.

5.3.9 Public Services

The Initial Study determined that the San Bernardino County Fire District would provide adequate service to the project site. The proposed project design would be submitted to and approved by the San Bernardino County Fire Department prior the issuance of building permits. Furthermore, the project would be required to pay development impact fees (DIFs) used to fund capital costs associated with constructing new public safety structures and purchasing equipment for new public safety structures.

As stated above, the proposed project would represent 0.23 percent of Upland's population in 2040. Therefore, new police protection facilities would not be required to serve the site. In addition, the Initial Study determined that the payment of DIFs would ensure that any impacts related to police protection would be less than significant.

The proposed project would be subject to the payment of development impact fees, which under Senate Bill 50 are deemed to be full and complete mitigation for the generation of new students. The proposed project would include private and public open space and contribute development impact fees that would address infrastructure and service needs and would not result in substantial deterioration of parks or other public facilities. Therefore, the proposed project's impacts to public services would be less than significant.

5.3.10 Recreation

As described in Section 3.0, Project Description, the proposed project would include 1.02 acres of private common open space. A 0.23-acre recreational area is planned with a community pool, pool house with restrooms, picnic tables, a children's play area, and barbeque and picnic areas. Five additional pocket parks totaling 0.79 acres would be located throughout the project site and would

include landscaping, children's play equipment, exercise equipment, and benches. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration could result. Impacts associated with the development of these facilities can all be mitigated to a less than significant level with the recommended mitigation measures.

The City maintains a performance standard of 3 acres of parkland for every 1,000 residents. The City maintains 286.1 acres of developed parkland, including parkland obtained through joint use agreements with Upland Unified School District.[3] Upland's population is estimated to be 78,841.[4] Therefore, 236.5 acres of parkland are required to maintain the City's performance standard of 3 acres of parkland for every 1,000 residents. As indicated above, Upland consists of 286.1 acres of developed parkland. Therefore, the City currently exceeds its parkland performance standard by 49.6 acres.

The City exceeds its parkland performance standard by 49.65 acres and therefore has sufficient recreational amenities for Upland's existing population plus up to an additional 16,533 persons. Additionally, the proposed project does not include any modifications to the City's existing parkland or recreational facilities. Therefore, the project would not require the construction of new or expansion of existing park facilities to serve the proposed development. Therefore, the proposed project's impacts on recreational facilities would be less than significant.

5.3.11 Tribal Cultural Resources

No known tribal cultural resources, as defined by Public Resources Code Sections 5020.1(k) and 5024.1, are located within or in the immediate vicinity of the site. Assembly Bill (AB) 52 states that prior to the release of an EIR for public review, a lead agency must provide the opportunity to consult with local tribes. The City sent letters to tribes historically affiliated with the project site on September 1, 2020, to give potential interested representatives the opportunity to consult with the City and provide any specialized knowledge of the project site.

The San Manuel Band of Mission Indians (SMBMI)[5] responded to the City on August 28, 2018 and requested the implementation of Mitigation Measures TCR-1 and TCR-2, which require SMBMI to be contacted if any pre-contact cultural resources are discovered during project implementation, and that any archaeological or cultural documents created as part of the project be supplied to the SMBMI. Therefore, with implementation of Mitigation Measures TCR-1 and TCR-2, impacts to tribal resources would be less than significant.

5.3.12 Utilities and Service Systems

The Initial Study determined that the proposed project would be adequately served by wastewater, water, and storm water facilities and that existing water entitlements and solid waste capacity

[3] City of Upland, State of California. 2015. *Final Program EIR, General Plan Update, SCH No. 2012041006*. Page 5.20-7. Certified September 28, 2015.

[4] United States Census Bureau. n.d. Quickfacts: Upland city, California. Website: https://www.census.gov/quickfacts/fact/table/uplandcitycalifornia,losangelescitycalifornia/LFE305222 (accessed February 9, 2024).

[5] Yuhaaviatam of San Manuel Nation (formerly the San Manuel Band of Mission Indians).

would be sufficient. Therefore, impacts to utilities and service systems would be less than significant.

5.3.13 Wildfire

The project site is not located within a State Responsibility Area (SRA) for fire protection and is not located within a very high fire hazard severity zone. Therefore, the proposed project would have no impact related to wildfire.

5.4 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACTS

Implementation of the proposed project would not result in any significant unavoidable impacts.

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6.0 ALTERNATIVES

In accordance with the California Environmental Quality Act (CEQA) and the *State CEQA Guidelines* (Section 15126.6), an Environmental Impact Report (EIR) must describe a reasonable range of alternatives to the project, or to the location of the project, that could attain most of the project's basic objectives, while avoiding or substantially lessening any of the significantly adverse environmental effects of the project. An EIR does not need to consider every conceivable alternative to a project, rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

As an EIR identifies ways to mitigate or avoid significant effects that a project may have on the environment, the discussion of alternatives should focus on alternatives to the project or its location that are capable of avoiding or substantially lessening significant effects of the project. The EIR needs to include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project, the significant effects of the alternative should be discussed, but in less detail than the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative."

As described in more detail in Chapter 3, Project Description, the proposed project would involve development of the project site with 65 single-family residential units, as well as circulation improvements, associated open space, circulation and loading, infrastructure improvements, and basin modification.

As provided by the project sponsor, the objectives of the proposed project are to:

- Create a distinctive community design with a well-designed entry, streetscapes, walls, and entry monument.
- Provide for architectural diversity within the community with varying residential floor plans and architectural styles.
- Provide for on-site recreational opportunities for residents through provision of common area open space within the community offering active and passive recreational amenities for all age groups.
- Design a development plan which ensures the community is adequately served by public facilities, infrastructure, and utilities without the need for extensions or improvements to existing public facilities.
- Incorporate green and sustainable design features into the development plan.

The potential environmental effects of implementing the proposed project are analyzed in Chapter 4, Setting, Impacts, and Mitigation Measures. The proposed project has been described and

analyzed in the previous chapters and in the Initial Study (Appendix A-5), with an emphasis on evaluating significant impacts resulting from the project and identifying mitigation measures to avoid or reduce these impacts to a less-than-significant level. It should be noted that all of the impacts identified for the proposed project can be mitigated to a less-than-significant level with implementation of the recommended mitigation measures.

The two alternatives to the proposed project that are discussed and evaluated in this chapter are the following:

- **No Project Alternative:** Under the No Project alternative, the project site would continue to be undeveloped. No modifications to the circulation network or infrastructure would occur.

- **Reduced Density/Conservation Alternative:** Under the Reduced Density/Conservation alternative, the project site would be developed with residential uses, similar to the proposed project, but would be reduced in size in order to avoid impacts to the Scale broom scrub natural community on the project site. Under this alternative, the project site would be developed with 45 single-family residential units. Infrastructure improvements and the extension of 15th Street would still occur, although a reduced amount of open space would be provided on the project site.

These alternatives represent a reasonable range of potential alternatives to the proposed project in light of the objective of further reducing impacts that are already less than significant with mitigation as identified in this EIR. A few other potential alternatives were also considered, as discussed later in this chapter; however, none of these alternatives would substantially reduce or avoid the environmental impacts of the proposed project and/or would not meet many of the basic project objectives and were therefore ultimately not selected for further analysis.

The purpose of this discussion of alternatives to the proposed project is to enable decision makers to evaluate the project by considering how alternatives to the project as proposed might reduce or avoid the project's impacts on the physical environment. The analysis in this chapter provides both a quantitative and qualitative evaluation of the environmental impacts that could be associated with each alternative and compares those potential impacts to those identified for the proposed project as described in Chapter 4, Setting, Impacts, and Mitigation Measures of this EIR.

6.1 NO PROJECT ALTERNATIVE

The following provides a description of the No Project alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the No Project alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the No Project alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the proposed project.

6.1.1 Principal Characteristics

The No Project alternative assumes that the proposed project would not be developed and that the project site would generally remain in its current condition. The project site would continue to be

undeveloped. Infrastructure improvements within and adjacent to the project site, include the extension of 15th Street, would not occur.

6.1.2 Analysis of the No Project Alternative

The potential impacts associated with the No Project alternative are described below. As discussed, the No Project alternative would avoid all of the less than significant impacts of the proposed project and no mitigation measures would be required. However, the No Project alternative would also not achieve any of the objectives of the proposed project.

6.1.2.1 Aesthetics

Implementation of the No Project alternative would not result in any new construction on the project site and therefore would not introduce any new buildings or structures that could have substantial adverse effects on scenic vistas, conflict with applicable regulations governing scenic quality, cast any new shadows, or create any new light or glare. Similar to the proposed project, the No Project alternative would not be located near a State scenic highway. Therefore, compared to the less than significant impacts of the proposed project, there would be no impacts related to aesthetics.

6.1.2.2 Air Quality

Implementation of the No Project alternative would not result in any construction activity within the project site, nor would new residents be located on the site. As a result, pollutant and odor concentrations would not be increased and dust, exhaust, and organic emissions related to construction would not be generated. In addition, this alternative would not result in the development of residential uses and would not result in an increase in operational vehicle trips in the city; therefore, the No Project alternative would not result in the less than significant impacts related to Clean Air Plan implementation. Compared to the less than significant impacts of the proposed project, there would be no impacts related to air quality.

6.1.2.3 Biological Resources

Implementation of the No Project alternative would not result in any construction activity within the project site and therefore would not result in the removal of any vegetation, sensitive natural communities, or special-status species habitats. Therefore, implementation of Mitigation Measures BIO-1 through BIO-6 would not be required to reduce impacts to special-status species or jurisdictional drainage features. Similarly, the No Project alternative would not result in the less-than-significant impacts to local policies or ordinances that protect biological resources or any habitat conservation plans, as there would be no development on the project site.

6.1.2.4 Greenhouse Gas Emissions

Implementation of the No Project alternative would not result in any construction activity within the project site. As a result, this alternative would not result in the generation of construction-period greenhouse gas (GHG) emissions. Similarly, the No Project alternative would not result in an increase in VMT, daily vehicle trips, or utility use (i.e., electricity, water, and wastewater) on the project site; therefore, the No Project alternative would not result in the less than significant project

impacts related to operational-period GHG emissions and potential conflicts with applicable plans, policies, or regulations adopted for the purposes of reducing the emission of GHGs. With implementation of the No Project alternative, there would be no impact on GHG emissions.

6.1.2.5 Hydrology and Water Quality

Implementation of the No Project alternative would not result in any construction activity within the project site. Therefore, the No Project alternative would not result in any changes to the existing drainage patterns or water quality in the vicinity of the site that would violate any water quality standards or result in flooding or erosion. The project site would continue to operate as a surplus piece of the 15th Street Flood Control Basin, and therefore would not decrease groundwater supplies as no groundwater would be used at the site. Similarly, the No Project alternative would not result in the less than significant impacts related to the release of pollutants in a flood zone or a conflict with a water quality control plan, as there would be no development on the site. With implementation of the No Project alternative, there would be no impact related to hydrology and water quality.

6.1.2.6 Noise and Vibration

Implementation of the No Project alternative would not result in any demolition or construction activity within the project site, nor would new employees be located on the site. Therefore, the No Project alternative would not expose surrounding land uses to short-term noise or vibration during construction and implementation of Mitigation Measure NOI-1 would not be required. Noise at the project site would not increase above that already occurring on the site and no increase in traffic noise would occur. With implementation of the No Project alternative, there would be no impact related to noise.

6.1.2.7 Transportation

Implementation of the No Project alternative would not result in any increases in automobile, transit, bicycle, or pedestrian travel to or from the project site, as the site is anticipated to remain in its current vacant condition. Therefore, compared to the less than significant impacts of the proposed project, there would be no impact related to conflicts with applicable transportation-related plans, policies and ordinances; vehicle miles traveled (VMT); design hazards; and emergency access.

6.1.2.8 Tribal Cultural Resources

Under this alternative no project-related ground disturbance would take place within the project site; therefore, no potential to disturb tribal cultural resources would occur. In the absence of any disturbance or corresponding impact, Mitigation Measures TCR-1 through TCR-5 would not be required.

6.2 Reduced Density/Conservation Alternative

The following provides a description of the 45-unit single-family residential alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the Reduced Density/Conservation alternative to the environmental

impacts associated with the proposed project. The discussion includes a determination of whether or not the Reduced Density/Conservation alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the proposed project.

6.2.1 Principal Characteristics

The Reduced Density/Conservation alternative assumes that the project site would still be developed with single-family residential uses, similar to the proposed project, but that only approximately 45 units would be developed on the site to avoid potential impacts to the Scale brush scrub on the project site, which is a sensitive natural community. The Scale broom scrub community is located just north of the existing residential uses along the north side of East 15th Street, and therefore the residential units proposed by the project would only be located west of the existing residential uses under this alternative. The Reduced Density/Conservation alternative would continue to include common open space areas on the project site similar to the proposed project, though the overall size would be reduced with the reduction in the developed area on the project site. The Reduced Density/Conservation alternative would also continue to include the infrastructure improvements from the proposed project, including the extension of East 15th Street basin and would similarly require modification of a portion of the remaining basin.

6.2.2 Analysis of the Reduced Density/Conservation Alternative

The potential impacts associated with the Reduced Density/Conservation alternative are described below. As discussed, the Reduced Density/Conservation alternative would avoid one of the potential significant biological resources impacts and generally reduce the already less-than-significant impacts related to air quality, GHGs, and noise as a reduce amount of construction would occur on the project site. However, as discussed below, all of the mitigation measures identified for the proposed project would still apply. In addition, the Reduced Density/Conservation alternative would achieve the objectives of the proposed project, although not to the same extent as the proposed project, as the site would be developed with 20 fewer residential uses.

6.2.2.1 Aesthetics

Under the Reduced Density/Conservation alternative, similar to the proposed project, the project site would be developed with residential uses, although fewer residential units and less open space would be developed as compared to the proposed project. Residential units included in the Reduced Density/Conservation alternative would be similar in size and style to the proposed project and located in the same general location, and therefore would result in similar impacts related aesthetics. Similar to the proposed project, impacts to scenic vistas, conflicts with applicable regulations governing scenic quality, new shadows, and creation of new light and glare would be less than significant. However, these impacts would be slightly reduced compared to the proposed project as the density on the project site would be reduced, allowing for more existing views to remain and fewer new sources of light and glare. Similar to the proposed project, impacts related to aesthetics would be less than significant with implementation of the Reduced Density/Conservation alternative.

6.2.2.2 Air Quality

Development of the Reduced Density/Conservation alternative would result in construction activity within the project site, although the construction duration would be slightly less with the reduced project size. Similar to the proposed project, this alternative would result in an increase in pollutant and odor concentrations during the construction period and would generate dust, exhaust, and organic emissions related to construction. However, this increase would be less than the increase resulting from the proposed project, and therefore this impact would remain less than significant. Similar to the proposed project, this alternative would result in development of residential uses on the project site and would result in an increase in operational vehicle trips compared to existing conditions, and therefore would result in an increase in mobile source pollutants within the City, although to a lesser extent than the proposed project. Construction activity associated with the Reduced Density/Conservation alternative would still result in less-than-significant construction-period health risk to off-site receptors. Therefore, impacts on air quality would be less than significant similar to, but less than, the proposed project.

6.2.2.3 Biological Resources

Under the Reduced Density/Conservation alternative, similar to the proposed project, the project site would be developed with residential uses, although fewer residential units and less open space would be developed as compared to the proposed project. The residential units would only be located west of the existing residential uses along the northern side of East 15th Street, and therefore would not impact the Scale broom scrub community, which is a sensitive natural community and therefore a special-status species, located on the project site. Therefore, compared to the proposed project, the Reduced Density/Conservation alternative would lessen impacts related to special-status species. The Reduced Density/Conservation alternative would be in the same general area as the proposed project, and therefore impacts to the coastal whiptail, nesting birds, and burrowing owls would not be avoided, and Mitigation Measures BIO-1 through BIO-3 would still be required. In addition, although impacts to Drainage 3 would be reduced compared to the proposed project, the Reduced Density/Conservation alternative would continue to result in impacts to the existing jurisdictional waters on the project site, including Drainages 1, 2, and a portion of Drainage 3. Therefore, implementation of Mitigation Measures BIO-4 through BIO-6 would still be required to reduce this impact to a less-than-significant level. Similar to the proposed project, the Reduced Density/Conservation alternative would continue to have less-than-significant impacts related to local policies and ordinances and habitat conservation plans.

6.2.2.4 Greenhouse Gas Emissions

Development of the Reduced Density/Conservation alternative would result in construction activity within the project site, although the construction period would be slightly less with the reduced project size. Similar to the proposed project, this alternative would result in an increase in construction-period GHG emissions; this increase would be less than the less-than-significant impact identified for the proposed project. Similar to the proposed project, this alternative would result in development of residential uses on the project site and would result in an increase in operational vehicle trips compared to existing conditions, and therefore would result in an increase in mobile source emissions within the City, although to a lesser extent than the proposed project. Therefore, the Reduced Density/Conservation alternative would continue to have a less-than-significant impact

related to operational GHG emissions as daily vehicle trips. With implementation of the Reduced Density/Conservation alternative, impacts on GHG emissions would be less than significant similar to, but less than, the proposed project.

6.2.2.5 Hydrology and Water Quality

Development of the Reduced Density/Conservation alternative would result in construction activity within the project site, although the construction period would be slightly less with the reduced project size. Similar to the proposed project, this alternative would result in changes to the existing drainage patterns and runoff from the project site that could violate water quality standards or result in erosion or flooding off-site. However, similar to the proposed project, compliance with existing regulations, including the General Construction Storm Water Permit and preparation of a Stormwater Pollution Prevention Plan (SWPPP), would continue to be required and reduce these impacts to less-than-significant levels. The Reduced Density/Conservation alternative would be located in the same location as the proposed project, and therefore would result in the same less-than-significant impacts related to groundwater use and flood hazards. The Reduced Density/Conservation alternative would result in the same less-than-significant impacts to hydrology and water quality as the proposed project.

6.2.2.6 Noise and Vibration

Under the Reduced Density/Conservation alternative, noise at the project site would increase above that already occurring on the project site, although to a lesser extent than under the proposed project due to the reduction in residential units. Increased traffic noise would also occur, but to a lesser degree than under the proposed project. This impact would be less than significant under both the proposed project and the Reduced Density/Conservation alternative. In addition, similar to the proposed project, the Reduced Density/Conservation alternative would include vibration-generating construction activities that would exceed maximum acceptable vibration for daytime residential uses, as new residential units would still be located adjacent to the existing residential units along East 15th Street, and implementation of Mitigation Measure NOI-1 would be required. With implementation of the Reduced Density/Conservation alternative, impacts related to noise would be less than significant with mitigation, similar to but less than the proposed project.

6.2.2.7 Transportation

Under the Reduced Density/Conservation alternative, similar to the proposed project, the project site would be developed with residential uses, although fewer residential units would be developed compared to the proposed project. The transportation and circulation changes under the Reduced Density/Conservation alternative would be similar to the proposed project, and vehicle trips would be reduced when compared to the proposed project. Therefore, the Reduced Density/Conservation alternative would result in similar less-than-significant impacts related to policy conflicts, VMT, design hazards, and emergency vehicle access as the proposed project.

6.2.2.8 Tribal Cultural Resources

Under this alternative, ground disturbance would still take place within traditional uses area or ancestral territory of the Gabrielleño Band of Mission Indians – Kizh Nation and/or the Yuhaaviatam of San Manuel Nation. Due to extensive past disturbance of the project site during past

construction and maintenance of the basin, there exists a low potential for buried pre-contact archaeological sites in the project site. Despite this low potential and the apparent absence of tribal cultural resource within the limits of the project site, as established during consultation, ground disturbance may potentially impact such resources that were previously undetected. While the area of ground disturbance may be reduced, a similar potential exists previously undetected tribal cultural materials could be encountered during project activities. Mitigation Measures TCR-1 through TCR-5 would be equally applicable to development of the project site under this alternative. Similar to the proposed project, the implementation of these measures would reduce potential impacts to tribal cultural resources to a less than significant level.

6.3 ALTERNATIVES CONSIDERED BUT NOT SELECTED FOR FURTHER ANALYSIS

During the Notice of Preparation comment period, the City received verbal and written suggestions for the identification and evaluation of alternatives to the proposed project (see Appendix A of this EIR). The following provides a description of various potential alternatives that were identified and considered, and the reasons why they were ultimately not selected for further evaluation in this EIR.

- **Off-Site Locations:** An alternative location was not considered for analysis because the project sponsor does not own or would not feasibly otherwise be able to gain control of a suitable vacant site within the city. If the proposed project were relocated to a different site that is not as well served by infrastructure and transit, impacts related to transportation, air quality, and greenhouse gas emissions (primarily related to VMT) could be more significant than those identified in this EIR for the proposed project. Therefore, such an alternative was ultimately not selected for further analysis in the EIR.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the above analysis, the No Project alternative would have the fewest impacts and would be the environmentally superior alternative. Under CEQA, if the No Project alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from among the other alternatives (*State CEQA Guidelines* Section 15126.6(e)(2)). While the No Project alternative would be environmentally superior in the technical sense in that contribution to the aforementioned impacts would not occur, it would also fail to achieve any of the project's objectives.

As discussed above, the Reduced Density/Conservation alternative would reduce the potentially significant impacts of the proposed project related to construction and special-status species. Therefore, the Reduced Density/Conservation alternative is considered the environmentally superior alternative. However, this alternative would not achieve the basic project objectives to the same extent as the proposed project.

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