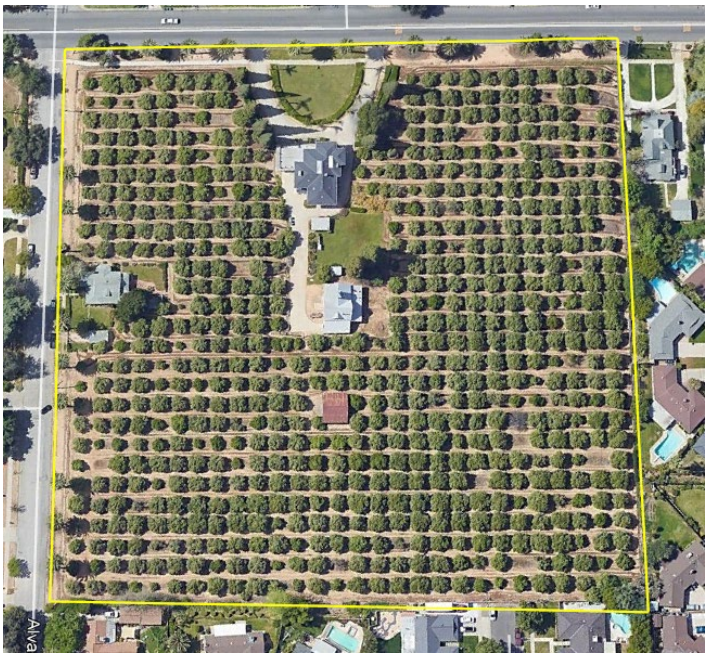
RECIRCULATED

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

301 PALM AVENUE RESIDENTIAL DEVELOPMENT PROJECT

CITY OF REDLANDS

SAN BERNARDINO COUNTY, CALIFORNIA



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September 2021

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301 PALM AVENUE RESIDENTIAL DEVELOPMENT PROJECT

CITY OF REDLANDS

SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

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LSA

September 2021

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
af	acre-feet
afy	acre-feet per year
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
AST	Aboveground Storage Tank
Basin	South Coast Air Basin
BMP	Best Management Practice
CA FID	California Facility Inventory Database
CalEPA	California Environmental Protection Agency
California Register	California Register of Historical Resources
CAP	Climate Action Plan
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CH_4	methane
City	City of Redlands
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Species
CO_2	carbon dioxide
CO_2e	Carbon Dioxide Equivalent
COC	Chemical of Concern
CSBFD-HMD	County of San Bernardino Fire Department, Hazardous Materials Division
CUP	Conditional Use Permit
dB	decibel
dBA	A-weighted decibel
DCV	Design Capture Volume
DIF	Development Impact Fee
DMA	Drainage Management Area
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EO	Executive Order
EPA	(United States) Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FMMP	Farmland Mapping and Monitoring Program
GHG	Greenhouse Gas
gpd	gallons per day
HALS	Historic American Landscapes Survey
HCOC	Hydrologic Condition of Concern
HIST UST	Hazardous Substance Storage Container Database
HOA	Homeowner's Association
HVAC	Heating, Ventilation, and Air Conditioning
I-10	Interstate 10
I-210	Interstate 210
IS	Initial Study
L_{dn}	Day-Night Average Noise Level
L_{eq}	Equivalent Continuous Sound Level
L_{max}	Maximum Instantaneous Noise Level
LMOR	Letter of Map Revision
LOS	Level of Service
LST	Localized Significance Threshold
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MLD	Most Likely Descendant
MND	Mitigated Negative Declaration
mph	miles per hour
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MT	Metric Ton
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
ND	Negative Declaration
NOI	Notice of Intent
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O_3	ozone
OCP	Organochlorine Pesticide
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
POTWs	Publicly Owned Treatment Works
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFD	Redlands Fire Department

RPD	Redlands Police Department
RUSD	Redlands Unified School District
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SOx	sulfur oxides
SQG	Small Quantity Generator
SRA	Source Receptor Area
SWEEPS	Statewide Environmental Evaluation and Planning System
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TIA	Traffic Impact Analysis
UBC	Uniform Building Code
USDOT	United States Department of Transportation
USGS	United States Geological Survey
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program
VEC	Vapor Environmental Condition
VES	Vapor Encroachment Screen
VOC	Volatile Organic Compounds
WDR	Waste Discharge Requirement
WQMP	Water Quality Management Plan

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1.0 INTRODUCTION AND PURPOSE

1.1 INTRODUCTION

Section 1.0 of this Initial Study (IS) describes the purpose, environmental authorization, the intended uses of the IS, documents incorporated by reference, and the processes and procedures governing the preparation of the environmental document. Pursuant to Section 15367 of the State of California *Guidelines for Implementation of the California Environmental Quality Act* (*CEQA Guidelines*), the City of Redlands (City) is the Lead Agency under the California Environmental Quality Act (CEQA). The City has primary responsibility for compliance with CEQA and consideration of the 301 Palm Avenue Residential Development Project (herein referred to as "Project" or "proposed Project").

The IS is organized as follows:

Section 1.0 *Introduction and Purpose* provides a discussion of the Initial Study's purpose, focus, legal requirements.

Section 2.0 *Project Description* provides a detailed description of the proposed Project as revised.

Section 3.0 *Environmental Checklist* includes a checklist and accompanying analyses of the Project's effect on the environment. For each environmental issue, the analysis identifies the level of Project's environmental impact.

Section 4.0 *References* details the references cited throughout the document.

Appendices A–K Include the technical material prepared to support the analyses contained in the IS.

1.2 PURPOSE

CEQA requires that the proposed Project be reviewed to determine the environmental effects that would result if the Project is approved and implemented. The City is the Lead Agency and has the responsibility for preparing and adopting the associated environmental document prior to consideration of the approval of the proposed Project. The City has the authority to make decisions regarding discretionary actions relating to implementation of the proposed Project.

This IS has been prepared in accordance with the relevant provisions of CEQA (California Public Resources Code Section 21000 et seq.); the *CEQA Guidelines,*[1] and the rules, regulations, and procedures for implementing CEQA as adopted by the City. The objective of the Initial Study is to inform City decision-makers, representatives of other affected/responsible agencies, the public and interested parties of the potential environmental consequences of the Project.

As established in *CEQA Guidelines* Section 15063(c), the purposes of an IS are to:

- Provide the Lead Agency (City of Redlands) with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND);
- Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for an ND or MND;

[1] California Code of Regulations, Title 14, Chapter 3, Sections 15000 through 15387.

- Assist in the preparation of an EIR, if one is required;
- Facilitate environmental assessment early in the design of a project;
- Provide a factual basis for finding in an ND or MND that a project will not have a significant effect on the environment;
- Eliminate unnecessary EIRs; and
- Determine whether a previously prepared EIR could be used with the Project.

1.3 INTENDED USE OF THIS INITIAL STUDY

The City formally initiated the environmental process for the proposed Project with the preparation of this Initial Study. The IS screens out those impacts that would be less than significant and do not warrant mitigation, while identifying those issues that require further mitigation to reduce impacts to a less than significant level. As identified in the following analyses, Project impacts related to various environmental issues either do not occur, are less than significant (when measured against established significance thresholds), or have been rendered less than significant through implementation of mitigation measures. Based on these analytical conclusions, this IS supports adoption of an MND for the proposed Project.

CEQA[2] permits the incorporation by reference of all or portions of other documents that are generally available to the public. The IS has been prepared utilizing information from City planning and environmental documents, technical studies specifically prepared for the Project, and other publicly available data. The documents utilized in the IS are identified in Section 3.0 and are hereby incorporated by reference. These documents are available for review at the City of Redlands, Planning Division.

1.4 PUBLIC REVIEW OF THE RECIRCULATED INITIAL STUDY

The Notice of Intent (NOI) to adopt an MND will be distributed to responsible and trustee agencies, other affected agencies, and other parties for a 30-day public review period from September 20 to October 19, 2021. The NOI includes an active weblink, from which public agencies and the community can access the IS and all supporting technical documents. All comments received from the public and responding agencies will be forwarded to the City staff for review and response. Comments may be addressed to the City as follows:

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City of Redlands
Development Services Department, Planning Division
35 Cajon Street, Suite 20
Post Office Box 3005
Redlands, California 92373
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sreilly@cityofredlands.org

[2] *CEQA Guidelines* Section 15150.

1.5 PROJECT REVISIONS

An Initial Study was circulated between August 21 and September 9, 2020. Subsequent to that public review, the Project has been revised. In summary, Project changes include:

- Reduction in the number of residential units from 30 to 28;
- Increase the size of Lots A and B to 10,930 and 9,972 square feet, respectively;
- Increase the number and size of citrus replanting(s) along the Project frontage on W. Palm Avenue and Alvarado Street;
- Removal of the open space plaza, walkways, raised planter, and seating areas from the corner of W. Palm Avenue and Alvarado Street;
- Retention of the orange trees on Parcel 3 (which is Lot E on the Tract Map) (0.82 acre);
- Establishment of 1.38 acres of permanent on-site open space on Lots A through E;
- Maintenance of full vehicular access from adjacent public streets through the Project;
- Removal of the entry gates and entry bulb at the Palm Avenue entry; and
- Removal of the gate and cul-de-sac at the Alvarado Street access.

2.0 PROJECT ELEMENTS

2.1 PROJECT LOCATION

The 8.81-acre property is located on the east corner of the intersection of West Palm Avenue and Alvarado Street, Assessor's Parcel Number (APN) 0173-231-05, in the City of Redlands, San Bernardino County, California. There are two physical addresses of the site: 301 West Palm Avenue and 827 Alvarado Street. The site is located within Township 1 South, Range 3 West, Section 34; San Bernardino Baseline & Meridian, as depicted on the *Redlands, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle map. **Figure 1: Regional Location** and **Figure 2: Project Location** shows the location of the Project site on a regional and local scale, respectively.

2.2 ENVIRONMENTAL SETTING

The Project site is currently occupied by five structures. The England House fronting Palm Avenue (301 West Palm Avenue), a Carriage House, Grove Barn, an England Cottage fronting Alvarado Street (827 Alvarado Street), and a detached one-car garage adjacent to the cottage. There is a commercial citrus grove on the Project site which features approximately 700 mature orange trees and includes a gravity irrigation system with a weir and concrete flumes.

The Project site is bounded on the north by West Palm Avenue and on the west by Alvarado Street. The site is bounded by single-family residential neighborhoods on its eastern and southern border. Single-family residential neighborhoods exist north of West Palm Avenue and west of Alvarado Street. Kingsbury Elementary School is located approximately 113 feet northeast of the Project site, northwest of Palm Avenue. Interstate 10 is approximately one mile east of the Project site.

The Project site is relatively flat and consists of sandy loam soils. One vegetation community, active orchard, with approximately 700 orange trees, exists on the Project site. Several plant species on the Project site are typical of residential neighborhoods consisting of ornamental trees and shrubs, which include: palm trees (*Washingtonia robusta*), rose bush (*Rosa* sp.), citrus trees (*Citrus sinensis*), black mustard (*Brassica nigra*), common dandelion (*Taraxacum officinale* ssp. *officinale*), and California poppy (*Eschscholzia californica*).

The City of Redlands General Plan land use designation for the Project site is *Low Density Residential*, and the zoning designation is *Suburban Residential District Single-Family Residential (R-S)*. The purpose of the R-S zone is to provide an environment conducive to the development of low density single-family homes, with no mixing of incompatible uses.[3] **Table A: Surrounding Land Uses and Setting** summarizes the existing surrounding land uses, General Plan designations and zoning designations.

[3] City of Redlands Code, Chapter 18.40 Suburban Residential District.

Table A: Surrounding Land Uses and Setting

Direction	Existing Land Use	General Plan Designation	Zoning Designation
Project Site	Single-Family Residential (2) and Orange Orchard	Low Density Residential	R-S Suburban Residential District Single-Family Residential
North	Single-Family Residential Units, West Palm Avenue, Elementary School	Low Density Residential and Public Institutional	R-S Suburban Residential District Single-Family Residential and Public Institutional Education District
East	Single-Family Residential Units,	Low Density Residential	R-S Suburban Residential District Single-Family Residential
South	Single-Family Residential Units,	Low Density Residential	R-S Suburban Residential District Single-Family Residential
West	Single-Family Residential Units, Alvarado Street	Low Density Residential	R-S Suburban Residential District Single-Family Residential

Source: City of Redlands GIS. Website Accessed May 6, 2020: https://coredlands.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=7577aed247714a8ba8810c5f7357f7b2.

2.3 PROJECT DESCRIPTION

The proposed Project would be a single family residential community. The main access would be from Palm Avenue with secondary access provided from Alvarado Street. The Grove Barn, the detached garage adjacent to the England Cottage, the gravity irrigation system, and orange trees on the north and east portion of the site would be removed to accommodate the residential community.

The Project applicant proposes to subdivide the existing 8.81 acre parcel into four separate parcels (Parcels 1 through 4) through an application for a Tentative Parcel Map (TPM 20185). The England House parcel (Parcel 1) would be approximately 1.54 acres (66,940 square feet) and would have independent access from Palm Avenue. The England Cottage (Parcel 2) encompasses approximately 0.45 acre (19,671 square feet) and will maintain its current access from Alvarado Street. The one-car garage on the Parcel 2 will be replaced with a new two-car detached garage. Approximately 59 orange trees will be retained on Parcels 1 and 2. Lot E (Parcel 3) totals 0.82 acre (35,968 square feet) at the corner of Palm Avenue and Alvarado Street. The existing orange trees on Lot E will be retained. Parcel 4 comprises 6.0 acres (261,943 square feet) encompassing the balance of the site. **Figures 3a** and **3b: Revised Project Site Plan** provide the site plan for the proposed Project. **Appendix A: Project Plan Sets (Revised)** includes the plan set that details the features of the proposed Project.

The Project applicant has submitted a Tentative Tract Map (TTM 20305-PRD) to subdivide Parcels 3 and 4 into 28 single-family lots, Street "A," and lettered lots A through E. Lots A and B, located at the Palm Avenue entrance, encompass 10,930 and 9,972 square feet, respectively. On both Lots A and B, up to four rows of orange trees (24-inch box and 15-gallon) and other landscape material will be planted between the sidewalk and the split-face masonry block perimeter wall. No amenities (e.g., benches, tables or play equipment) would be provided. Lots C and D, located on either side of the Alvarado Street emergency access, include 1,774 and 1,356 square feet of landscaping, respectively. A row of semi-dwarf orange trees (24-inch box) and other landscape material would be planted between the sidewalk and the split-face masonry block perimeter wall. Lot C includes a five-foot wide utility and access easement extends across the front of Parcel 2. Lot E (Parcel 3) totals 0.82 acre (35,968 square feet) at the corner of Palm Avenue and Alvarado Street. The existing orange trees on Lot E will be retained. Approximately 1.38 acres[4]

[4] The net development area totals 6.82 acres (8.81 acres minus Parcel 1 [1.54 acres] and Parcel 2 [0.45 acre]). The applicant must provide 20 percent of the development area, or 1.36 acres, as open space. This requirement is achieved through the

comprising Lots A through E will be set aside permanently and maintained as open space. It is currently planned to leave these areas open to the public and residents of the HOA. Figures 4a through 4g: Revised Project Landscaping Plan detail the proposed landscaping of the Project site, including the landscaping of the open space, as well as the existing orange trees and other landscaping maintained on Parcels 1 and 2 and Lot E. Preservation of existing structures and landscaping of Parcels 1 and 2 and Parcel 3/Lot E results in the retention of approximately 32 percent (2.81 acres) of the site in its current condition. The neighborhood on Parcel 4 would consist of 28 one story single-family residential units. Proposed residential lots would range in size from 6,644 to 10,497 square feet, averaging 7,221 square feet. Three different floor plans for the residential units are proposed: Plan 1 would include homes that are 3 bedrooms and 2 baths at approximately 2,040 square feet; Plan 2 would include homes that are 3 bedrooms and 3 bathrooms totaling 2,176 square feet; and, Plan 3 would include homes that are 3 bedrooms and 2.5 baths including a flex space for storage or an optional 4th bedroom and 3rd bathroom totaling between 2,423 to 2,601 square feet. All of the homes on the Project site would include an attached 2-car garage. The architecture of each home would reflect either a Craftsman, Farmhouse, or Spanish Colonial style.

Access to the Project site would be provided via a new street (Street "A" as shown in **Figures 3a** and **3b**) off West Palm Avenue approximately 500 feet northeast of the West Palm Avenue/Alvarado Street intersection. Secondary access to the Project will be provided off Alvarado Street, approximately 530 feet southeast of the West Palm Avenue/Alvarado Street intersection. Driveways to the England House and England Cottage on Parcels 1 and 2, respectively, would be retained and no improvements would occur. The internal circulation system (Street "A") of the proposed Project would include one residential street extending from the entrance off West Palm Avenue and ending at the secondary access point off of Alvarado Street.

The Project applicant would request will-serve letters from the local utility providers (i.e., natural gas, electricity, water and sewer) allowing connection to existing utilities in the Project area. It is not anticipated that off-site improvements to existing utilities are required; however, new utility infrastructure would be developed on the Project site in order to adequately serve the future residents.

2.4 METHODOLOGY

The environmental analysis in this IS/MND provides an environmental review of the Project pursuant to CEQA. The details of this proposed Project and associated actions have been characterized in this section and are also addressed in detail throughout Section 3.0 of this IS/MND. If the Project is approved, the proposed development would be allowed without further discretionary approval, so long as the development complies with the City's regulations, Project-specific mitigation measures, and conditions of approval.

2.5 REQUIRED PERMITS AND APPROVALS

The City is expected to use this IS/MND in consideration of the proposed Project and associated actions. These actions may include, but are not limited to, the following:

- Approval of a Tentative and Final Parcel Maps

permanent maintenance of Lots A through E, which collectively total 1.38 acres (or 20.2 percent of the site's net development area).

- Approval of Tentative and Final Tract Maps
- Conditional Use Permit (CUP) for a Planned Residential Development (PRD)
- Planning Commission Review and Approval; and
- A variance to front setbacks
- A variance to reduce the amount of required rear yard open space.
- Demolition Permits for the removal of two accessory structures
- Minor Exception Permit for the construction of walls and fences exceeding six feet tall and walls and fences exceeding the maximum allowable height within front yard setbacks.
- Grading and Building Permits.

Approvals from other regulatory agencies may also be required and are listed as follows:

- State Water Resources Control Board: Applicant must submit a Notice of Intent to comply with the General Construction Activity NPDES Permit.
- Utility Providers: Will-Serve Letters.

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Project Location

City Boundary

FIGURE 1

N

0 0.5 1

Miles

SOURCE: Google (2018)

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301 Palm Avenue Project

Regional Location

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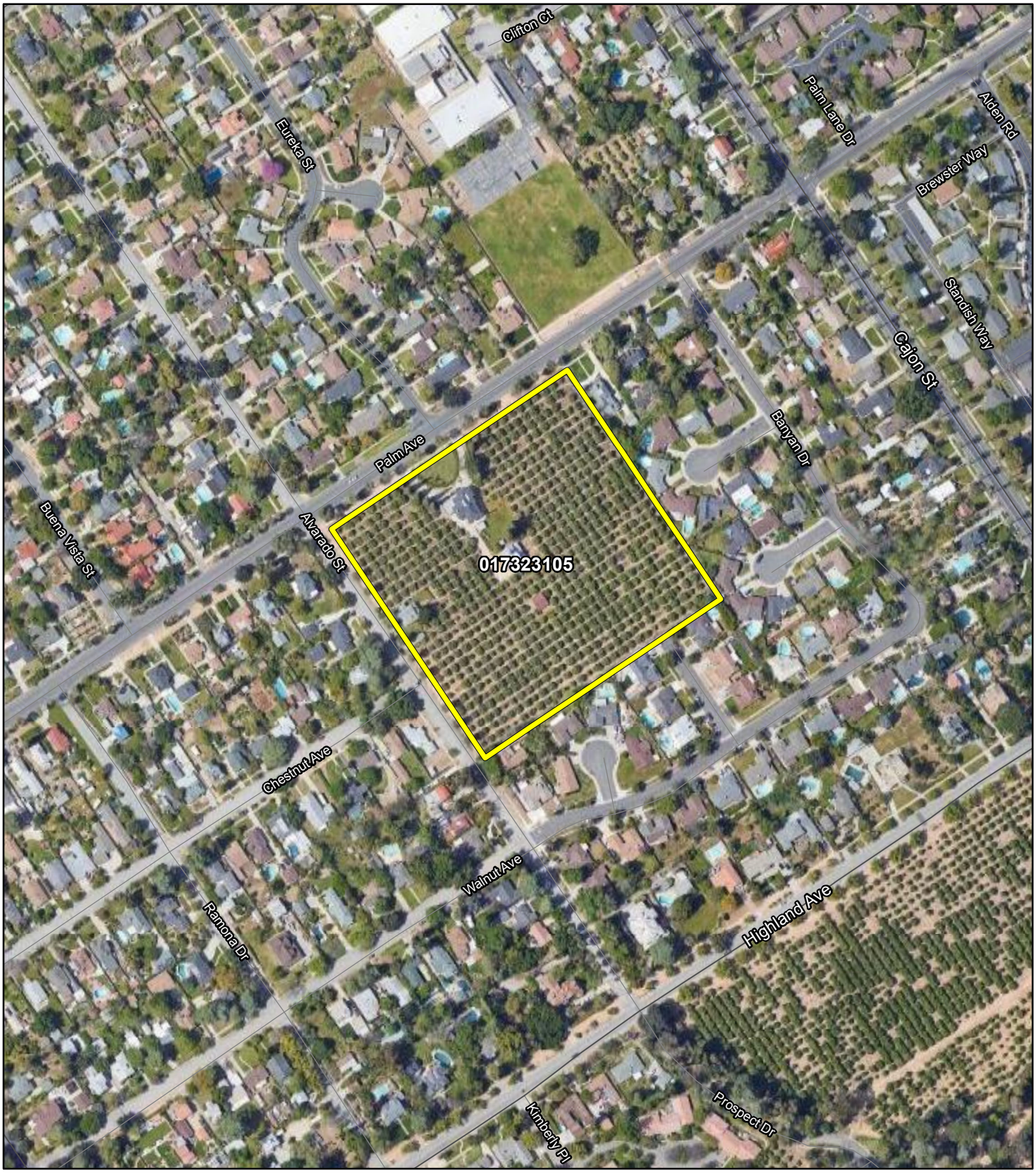

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LEGEND

Project Location

FIGURE 2

N

0 150 300

Feet

SOURCE: Google (2018)

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301 Palm Avenue Project

Project Location

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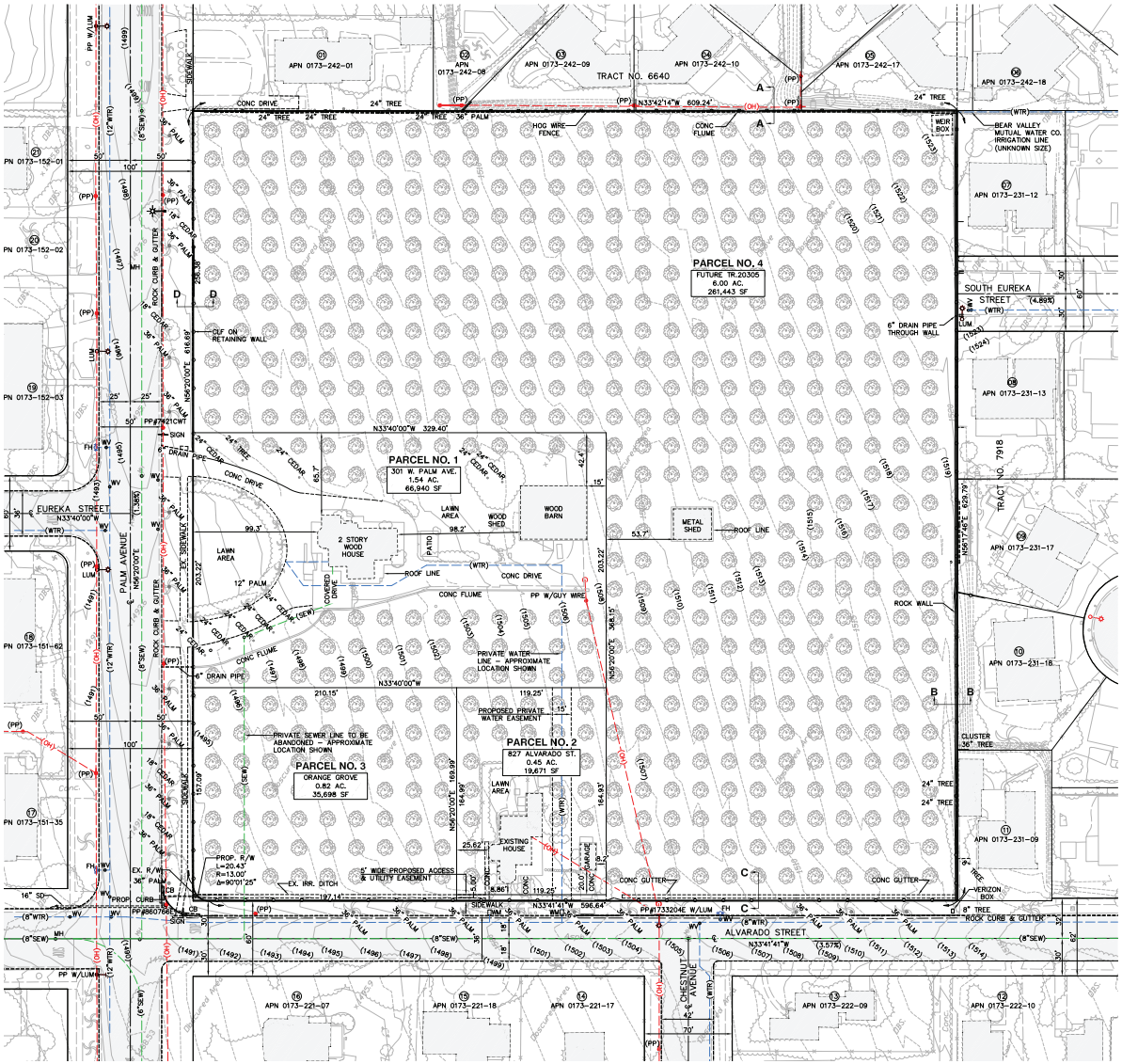

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FIGURE 3a

0 75 150

FEET

SOURCE: Hicks &Hartwick, Inc.

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301 Palm Avenue Project

Site Plan

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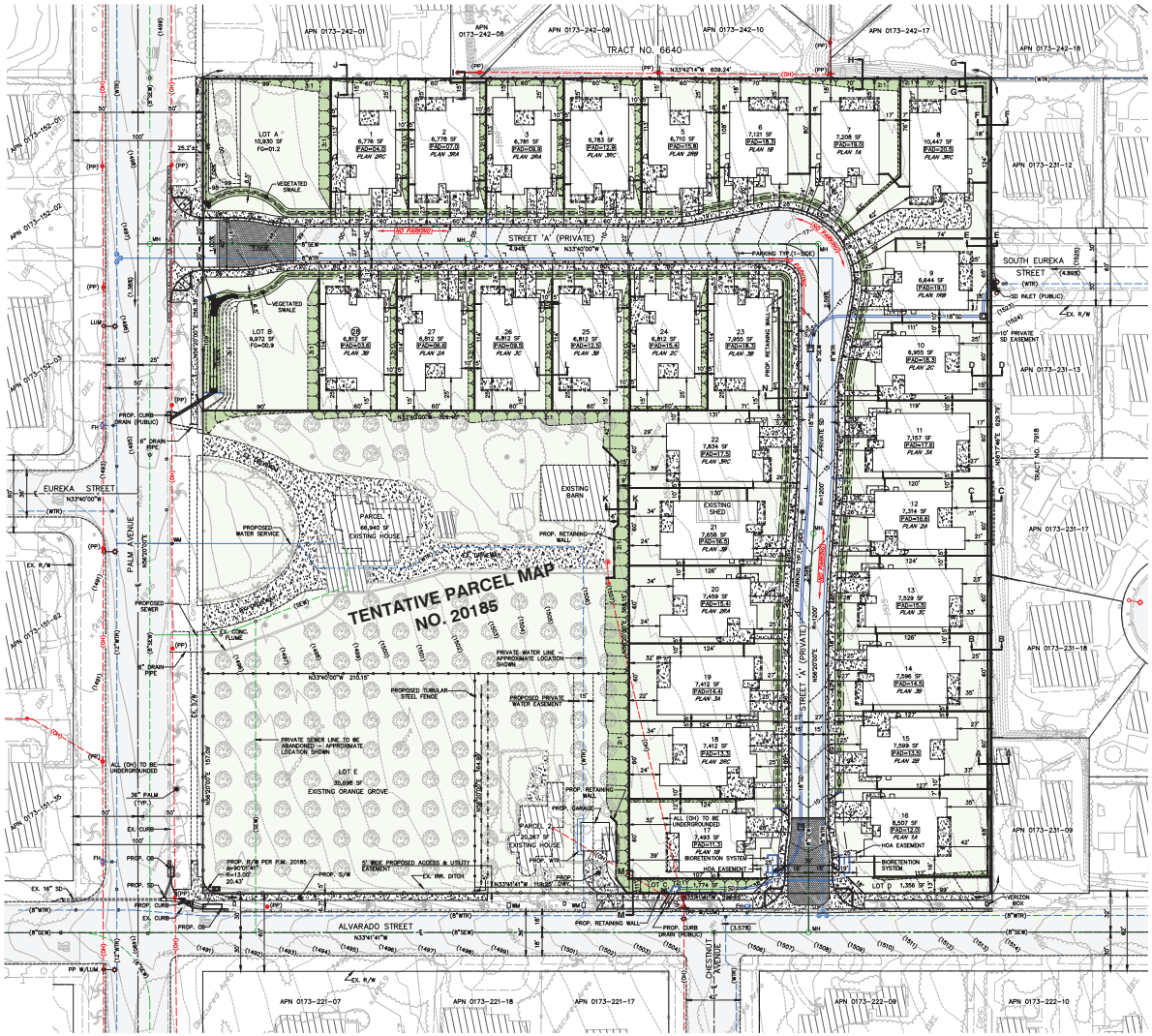

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FIGURE 3b

N

0 75 150

FEET

SOURCE: Hicks & Hartwick, Inc.

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301 Palm Avenue Project

Site Plan

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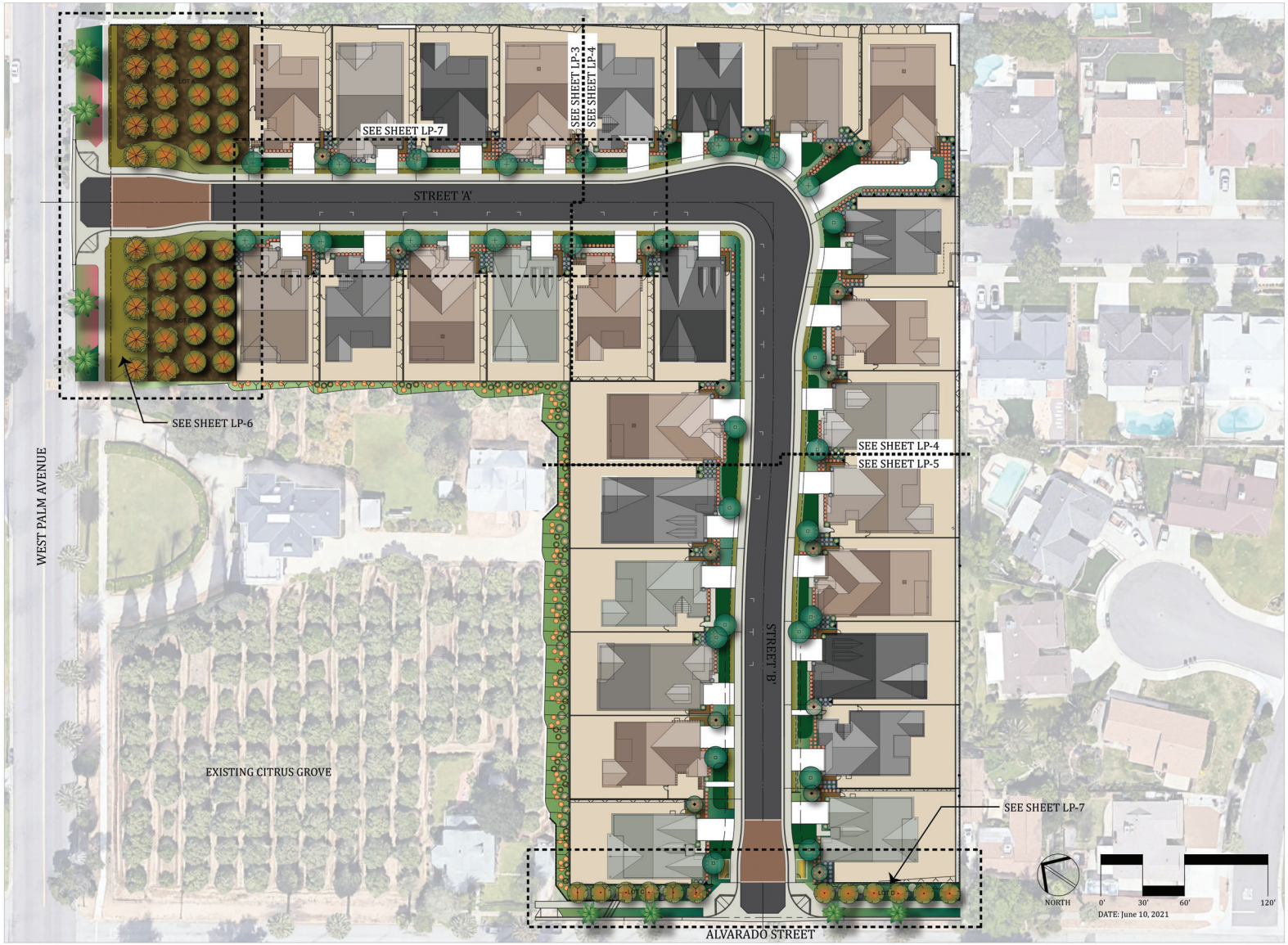

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FIGURE 4a

N

0 60 120

FEET

SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan -
Overall Landscaping Exhibit

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FIGURE 4b

N

0 80 160

FEET

SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan - Fence and Wall Exhibit

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FRONT YARD PLANT PALETTE:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
TREES				
	LAGERSTROEMIA INDICA	CRAPE MYRTLE	24" BOX	LOW
	MAGNOLIA GRANDIFLORA 'SAMUEL SOMMERS'	SOUTHERN MAGNOLIA	24" BOX	LOW
SHRUBS / VINES				
A	CAESALPINIA PULCHERRIMA	MEXICAN BIRD OF PARADISE BUSH	5 GAL	LOW
A	RHAPHIOLEPIS INDICA 'CLARA'	INDIA HAWTHORN	5 GAL	LOW
A	ROMNEYA COULTERI	MATILIJA POPPY	5 GAL	LOW
B	DALEA FRUTESCENS	BLACK DALEA	5 GAL	LOW
B	LAVANDULA 'OTTO QUAST'	SPANISH LAVENDER	5 GAL	LOW
B	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	PINK MUHLY	5 GAL	LOW
C	ACHILLEA 'MOONSHINE'	MOONSHINE YARROW	1 GAL	LOW
C	LANTANA x 'LEMON SWIRL'	'LEMON SWIRL' LANTANA	1 GAL	LOW
C	SALVIA GREGGII	AUTUMN SAGE	1 GAL	LOW
▲	FICUS PUMILA	CREEPING FIG	1 GAL	LOW
▲	MACFADYENA UNGUIS-CATI	CAT'S CLAW	1 GAL	
▲	PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY	1 GAL	LOW
GROUNDCOVERS				
	CHRYSACTINIA MEXICANA	DAMIANITA DAISY	1 GAL	LOW
	TEUCHRIUM x LUCIDRYS	WALL GERMANDER	1 GAL	LOW
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	1 GAL	LOW
	CAREX SP.	SEDGE	1 GAL	MODERATE
	SODDED TURF	MARATHON II FESCUE OR APPROVED EQUAL	1 GAL	HIGH

SLOPE PLANTING PALETTE:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
SHRUBS				
D	ARCTOSTAPHYLOS 'SUNSET'	SUNSET MANZANITA	5 GAL	LOW
E	ELAEAGNUS PUNGENS	SILVERBERRY	5 GAL	LOW
F	LANTANA 'SPREADING SUNSET'	LANTANA	1 GAL	LOW
GROUNDCOVERS				
	MYOPORUM PARVIFOLIUM 'PINK'	PINK MYOPORUM	1 GAL	LOW

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FIGURE 4c

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SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan - Front Yard Planting

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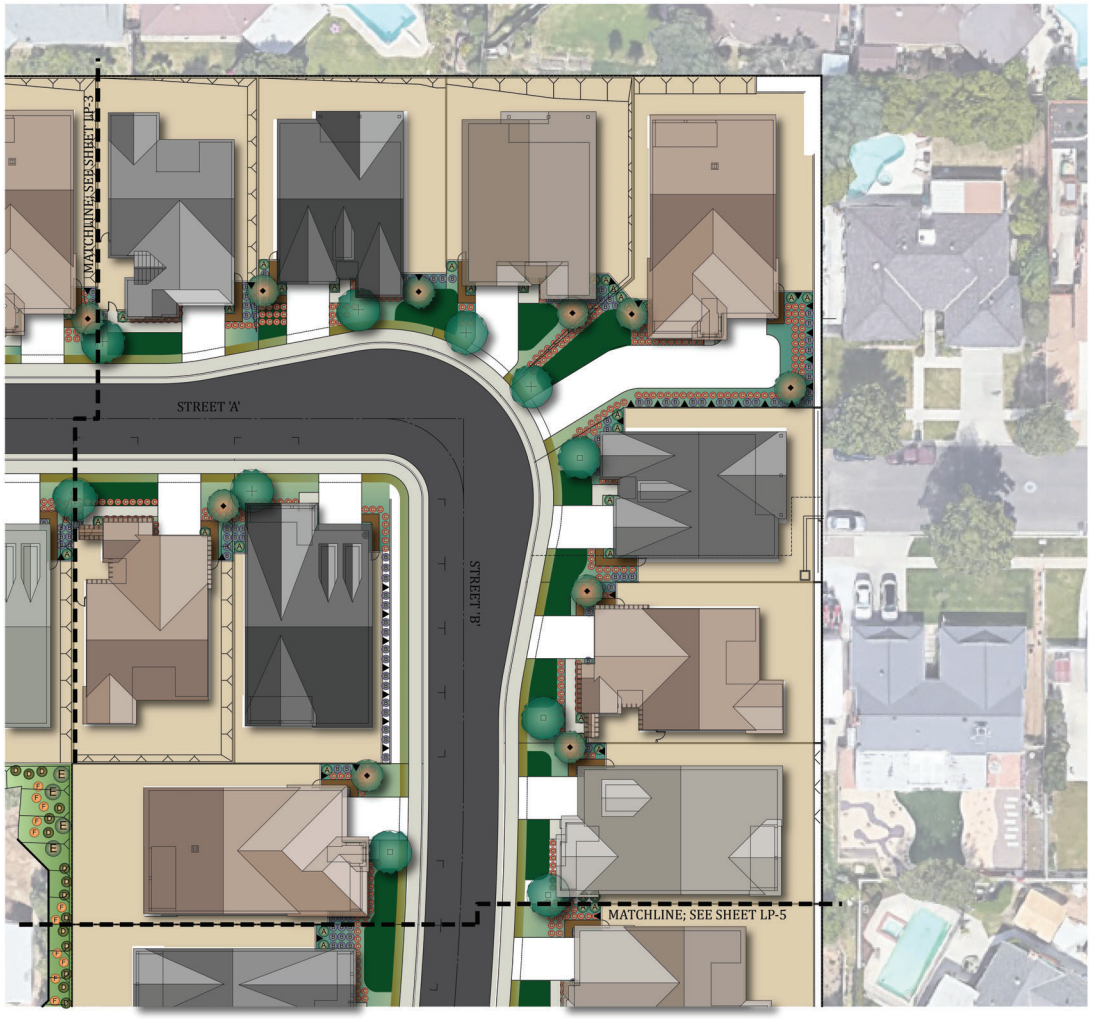

FRONT YARD PLANT PALETTE:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
TREES				
	LAGERSTROEMIA INDICA	CRAPE MYRTLE	24" BOX	LOW
	MAGNOLIA GRANDIFLORA 'SAMUEL SOMMERS'	SOUTHERN MAGNOLIA	24" BOX	LOW
	PISTACIA CHINENSIS	CHINESE PISTACHE	24" BOX	LOW
SHRUBS / VINES				
A	CAESALPINIA PULCHERRIMA	MEXICAN BIRD OF PARADISE BUSH	5 GAL	LOW
A	RHAPHIOLEPIS INDICA 'CLARA'	INDIA HAWTHORN	5 GAL	LOW
A	ROMNEYA COULTERI	MATILIJA POPPY	5 GAL	LOW
B	DALEA FRUTESCENS	BLACK DALEA	5 GAL	LOW
B	LAVANDULA 'OTTO QUAST'	SPANISH LAVENDER	5 GAL	LOW
B	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	PINK MUHLY	5 GAL	LOW
C	ACHILLEA 'MOONSHINE'	MOONSHINE YARROW	1 GAL	LOW
C	LANTANA x 'LEMON SWIRL'	'LEMON SWIRL' LANTANA	1 GAL	LOW
C	SALVIA GREGGII	AUTUMN SAGE	1 GAL	LOW
▲	FICUS PUMILA	CREEPING FIG	1 GAL	LOW
▲	MACFADYENA UNGUIS-CATI	CAT'S CLAW	1 GAL	
▲	PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY	1 GAL	LOW
GROUNDCOVERS				
	CHRYSACTINIA MEXICANA	DAMIANITA DAISY	1 GAL	LOW
	TEUCHRIUM x LUCIDRYS	WALL GERMANDER	1 GAL	LOW
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	1 GAL	LOW
	CAREX SP.	SEDGE	1 GAL	MODERATE
	SODDED TURF	MARATHON II FESCUE OR APPROVED EQUAL	1 GAL	HIGH

SLOPE PLANTING PALETTE:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
SHRUBS				
D	ARCTOSTAPHYLOS 'SUNSET'	SUNSET MANZANITA	5 GAL	LOW
E	ELAEAGNUS PUNGENS	SILVERBERRY	5 GAL	LOW
F	LANTANA 'SPREADING SUNSET'	LANTANA	1 GAL	LOW
GROUNDCOVERS				
	MYOPORUM PARVIFOLIUM 'PINK'	PINK MYOPORUM	1 GAL	LOW

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FIGURE 4d

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SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan - Front Yard Planting

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FRONT YARD PLANT PALETTE:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
TREES				
	LAGERSTROEMIA INDICA	CRAPE MYRTLE	24" BOX	LOW
	MAGNOLIA GRANDIFLORA 'SAMUEL SOMMERS'	SOUTHERN MAGNOLIA	24" BOX	LOW
	PISTACIA CHINENSIS	CHINESE PISTACHE	24" BOX	LOW
SHRUBS / VINES				
A	CAESALPINIA PULCHERRIMA	MEXICAN BIRD OF PARADISE BUSH	5 GAL	LOW
	RHAPHIOLEPIS INDICA 'CLARA'	INDIA HAWTHORN	5 GAL	LOW
	ROMNEYA COULTERI	MATILIJA POPPY	5 GAL	LOW
B	DALEA FRUTESCENS	BLACK DALEA	5 GAL	LOW
	LAVANDULA 'OTTO QUAST'	SPANISH LAVENDER	5 GAL	LOW
	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	PINK MUHLY	5 GAL	LOW
C	ACHILLEA 'MOONSHINE'	MOONSHINE YARROW	1 GAL	LOW
	LANTANA x 'LEMON SWIRL'	'LEMON SWIRL' LANTANA	1 GAL	LOW
	SALVIA GREGGII	AUTUMN SAGE	1 GAL	LOW
▲	FICUS PUMILA	CREEPING FIG	1 GAL	LOW
	MACFADYENA UNGUIS-CATI	CAT'S CLAW	1 GAL	
	PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY	1 GAL	LOW
GROUNDCOVERS				
	CHRYSACTINIA MEXICANA	DAMIANITA DAISY	1 GAL	LOW
	TEUCHRIUM x LUCIDRYS	WALL GERMANDER	1 GAL	LOW
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	1 GAL	LOW
	CAREX SP.	SEDGE	1 GAL	MODERATE
	SODDED TURF	MARATHON II FESCUE OR APPROVED EQUAL	1 GAL	HIGH

SLOPE PLANTING PALETTE:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
SHRUBS				
D	ARCTOSTAPHYLOS 'SUNSET'	SUNSET MANZANITA	5 GAL	LOW
E	ELAEAGNUS PUNGENS	SILVERBERRY	5 GAL	LOW
F	LANTANA 'SPREADING SUNSET'	LANTANA	1 GAL	LOW
GROUNDCOVERS				
	MYOPORUM PARVIFOLIUM 'PINK'	PINK MYOPORUM	1 GAL	LOW

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FIGURE 4e

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SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan - Front Yard Planting

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FIGURE 4f

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SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan -
Lettered Lots and Parkway Planting

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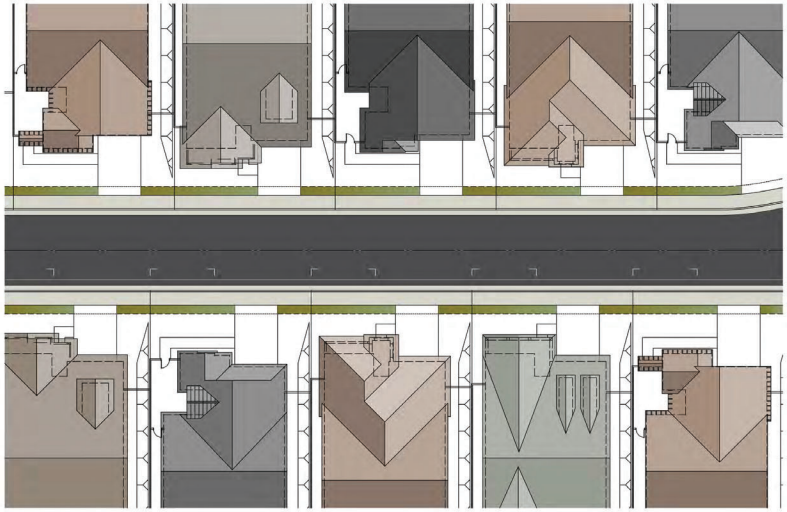
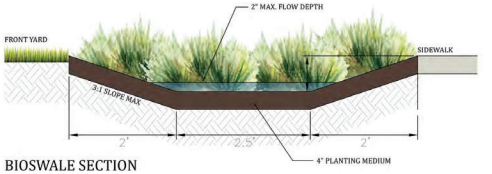


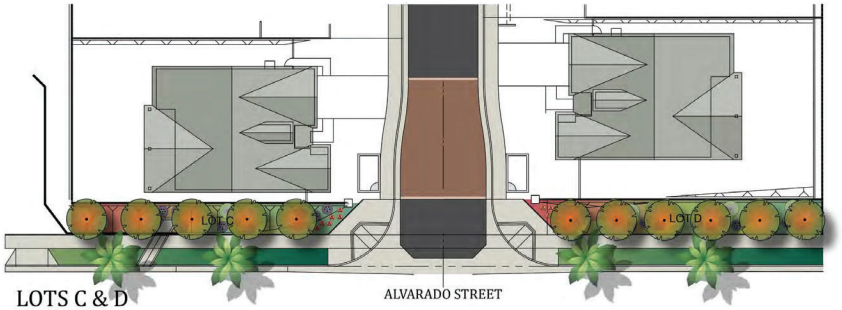
TYPICAL BIOSWALE PLANTING

BIOSWALE PLANTING:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
GROUNDCOVERS				
	CAREX SP.	SEDGE	4" POTS	MODERATE



BIOSWALE SECTION
SCALE: 1" = 1'-0"



LOTS C & D

LETTERED LOTS C & D PLANTING:

	BOTANIC NAME	COMMON NAME	SIZE	WUCOLS
TREES				
	CITRUS SPP.	SEMI-DWARF CITRUS	24" BOX	LOW
SHRUBS / VINES				
	ASCLEPIAS CURASSAVICA	TROPICAL MILKWEED	5 GAL	LOW
	CEANOTHUS 'CONCHA'	CONCHA WILD LILAC	5 GAL	LOW
	SALVIA CLEVELANDII 'WINIFRED GILMAN'	WINIFRED GILMAN SAGE	5 GAL	LOW
GROUNDCOVERS				
	ERIOGONUM UMBELLATUM	SULPHUR BUCKWHEAT	1 GAL	LOW
	ERIOGONUM GRANDE VAR. RUBESCENS	RED BUCKWHEAT	1 GAL	LOW
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	1 GAL	LOW

LSA

FIGURE 4g

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SOURCE: Community Works Design Group

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301 Palm Avenue Project

Project Landscaping Plan - Palm Avenue Entrance

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3.0 INITIAL STUDY CHECKLIST

1. **Project Title:**
   301 Palm Avenue Residential Development Project

2. **Lead Agency Name and Address:**
   City of Redlands
   Development Services Department, Planning Division
   35 Cajon Street, Suite 20
   Post Office Box 3005
   Redlands, California 92373

3. **Contact Person and Phone Number:**
   Sean Reilly, Senior Planner
   (909) 798-7555
   sreilly@cityofredlands.org

4. **Project Location:**
   The Project site is located on the east corner of the intersection of West Palm Avenue and Alvarado Street, Assessor's Parcel Number (APN) 0173-231-05-0000, in the City of Redlands, San Bernardino County, California. The physical address of the site is 301 West Palm Avenue. The site is located within Township 1 South, Range 3 West, Section 34; San Bernardino Baseline & Meridian, as depicted on the *Redlands, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle map.

5. **Project Sponsor's Name and Address:**
   Diversified Pacific Communities
   10621 Civic Center Drive
   Rancho Cucamonga, California 91730

6. **General Plan Designation:**
   Existing: *Low Density Residential*
   Proposed: *Low Density Residential*

7. **Zoning:**
   Existing: *R-S Suburban Residential District Single-Family Residential*
   Proposed: *R-S Suburban Residential District Single-Family Residential*

8. **Description of Property:**
   The 8.81 acre Project site is currently developed with two single-family residential units, associated outbuildings and a Carriage Home/barn. The remainder of the site is currently occupied by an active citrus grove containing approximately 700 orange trees.

9. **Surrounding Land Uses and Setting:**
   The Project site is bound on the north by West Palm Avenue and on the west by Alvarado Street. The eastern and southern boundary of the Project site are adjacent to a neighborhood of single-family residential units. Kingsbury Elementary School is located approximately 113 feet northeast of the Project site, northwest of Palm Avenue. Interstate 10 is approximately one mile east of the Project site.

10. **Other Public Agencies whose Approval is Required:**
    Approvals from other regulatory agencies may also be required and are listed as follows:

    - State Water Resources Control Board: Applicant must submit a Notice of Intent to comply with the General Construction Activity NPDES Permit
    - Utility Providers: Will-Serve Letters.

11. **Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?** Yes. Please refer to Checklist Section 3.17.
    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and Project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process (See Public Resources Code Section 21083.3.2.). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially "Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of the initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Signature: _____ Date: September 17, 2021

Name and Title: Sean Reilly, Senior Planner

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c) (3) (D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:

a. The significance criteria or threshold, if any, used to evaluate each question; and

b. The mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 AESTHETICS

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to trees, rock outcroppings and historic buildings within a state scenic highway?	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

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

Less than Significant Impact

Discussion of Effects: Scenic resources and vistas in the City consist of the scenic corridors and views to and from open spaces, canyonlands, hillsides, groves, the San Bernardino Mountains to the north, and historic districts and resources. The City of Redlands has strong historical ties to agricultural production, particularly citrus. The visual character provided by the groves is distinctive, adding greenery and texture to the urban area while providing a connection to Redlands' heritage.

The Project site is occupied by two single-family residential units, a Carriage Home/Barn, associated outbuildings, and a citrus orchard occupied by approximately 700 orange trees. The Project site has been occupied by these uses since at least the 1930s, according to historic aerials. The site is bounded to the north by West Palm Avenue and single-family residential units beyond the road; a single-family residential unit neighborhood to the east and south; and, Alvarado Street to the west and beyond the road a single-family residential unit neighborhood. The Project site is level and no topographical features exist on the site. Due to the amount of vegetation in the Project area, distant views of the San Bernardino Mountains to the north are partially obscured.

Parcel 1 (the England House) is approximately 1.54 acres (66,940 square feet) and would maintain its access from Palm Avenue. The England Cottage (Parcel 2) encompasses approximately 0.45 acre (19,671 square feet) and will keep its access from Alvarado Street. The one-car garage on the Parcel 2 will be replaced with a new two-car detached garage. Approximately 59 mature orange trees will be maintained

on Parcels 1 and 2. The Project Applicant will apply for a "Historical Property" designation on Parcel 1 as defined in the City of Redlands Municipal Code Chapter 2.62. The existing orange trees on Parcel 3/Lot E, located on 0.82 acre (35,698 square feet) at the corner of Palm Avenue and Alvarado Street will be retained to continue the current aesthetic condition at this corner.

The proposed Project would remove approximately 6.00 acres of existing citrus trees to develop a 28-home single-family neighborhood. The southwestern portion of the Project site Parcel 3 (Lot E) would retained "as is" and will be owned and maintained by the HOA of the future subdivision on Parcel 4. Overall, 2.81 acres (122,309 square feet) or approximately 32 percent of the 8.81-acre site will be retained in its current condition. Approximately 122 (17 percent) of the existing orange trees on site will be retained on Parcels 1 and 2 and Parcel 3/Lot E. The retention of existing structures and landscaping on Parcels 1 and 2 and the existing orange groves on Parcel 3/Lot E, results in the preservation of 59 and 54 percent of the existing roadway frontage along Palm Avenue and Alvarado Street, respectively. Existing rock curbs and palm trees along the entirety of both street frontages will be retained. On the remaining portion of the frontage along Palm Avenue, Lots A and B will be replanted with up to four rows of orange trees (24-inch box and 15 gallon) and other landscape material between the sidewalk and split-face masonry block perimeter wall. The depth of Lots A and B and the staggered planting of larger orange trees will screen the perimeter walls. On the Alvarado Street frontage, Lots C and D will planted with a row of semi-dwarf orange trees (24-inch box) and other landscape material will be planted between the sidewalk and the split-face masonry block perimeter wall.

Orange trees retained on the existing residential parcels (Parcels 1 and 2) and at the corner of Palm Avenue and Alvarado Street (Parcel 3/Lot E) would maintain the visual character along the majority of the Project frontage. The two existing single-family residences would also be retained on the Project site to maintain the visual character associated with historic districts and resources within the City of Redlands. The replanting of new orange tress in the open space lots along Palm Avenue and Alvarado Street would continue the landscape pattern of the preserved areas.

Although a majority of the existing orange trees would be removed from the site, the on-site retention of approximately 122 orange trees; retention of the historic residential structures, features, and associated landscaping on Lots 1 and 2 and Parcel 3/Lot E; provision of a larger buffer on the W. Palm Avenue frontage; the replanting of orange trees on Lots A through D; and the compatibility of the overall landscaping pallet would allow the continuation of the existing visual context and scenic character of Project perimeter and the site itself. Off-site sensitive uses (which are somewhat elevated compared to the proposed Project site) would still have similar limited/obstructed views of the San Bernardino Mountains to the north of the site with implementation of the proposed Project because the proposed single-family residential units would be limited to single story homes.

The proposed Project would have a **less than significant** impact related to scenic vistas. No mitigation is required.

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

Less than Significant Impact

Discussion of Effects: According to Caltrans,[5] portions of Interstate 210 (I-210) (between Redlands and Highland) and I-10 at the junction of I-210 located approximately 2.17 miles to the north of the Project site are considered Eligible State Scenic Highways but are not officially designated. There is substantial distance and existing visual obstructions between [eligible] State Scenic Highways I-210 and I-10 and the Project site that precludes visual obstruction of any scenic resources from either highway. Since the Project site is not within the view-sheds of the portions of I-210 and/or I-10 that are considered Eligible State Scenic Highways, impacts to scenic resources within a state scenic highway would be **less than significant**. No mitigation is required.

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

Less than Significant Impact

Discussion of Effects: The proposed Project is located in an established urbanized neighborhood within the City of Redlands. The construction phase of the Project would introduce the use of machinery such as excavators and bulldozers. The presence of the construction equipment, as well as the construction activities, would temporarily alter the visual character of the Project site. Construction staging areas, including earth stockpiling, storage of equipment and supplies, and related activities would contribute to a disturbed site, which could be perceived by some viewers as a potential visual impact. Since construction activities would be temporary, they would not create a significant permanent impact to the visual character or quality of the site and its surroundings.

Figures 4f and **4g** depict anticipated public views of the Project site along Alvarado Street and Palm Avenue. Upon development, the majority of existing Project frontage along Palm Avenue (373 feet or 59 percent) and Alvarado Street (328 feet or 54 percent) would be retained. Existing rock curbs and palm trees along the entirety of both street frontages will be retained.

Public views of the site along Palm Avenue will include the enhanced landscaping, staggered rows of orange trees, the split-face masonry block wall, and portions of the proposed residences. Along this frontage, Lots A and B will be landscaped with up to four rows of orange trees (24-inch box and 15 gallon) and other landscape material between the sidewalk and split-face masonry block perimeter wall. The depth of Lots A (99 feet) and B (90 feet) and the staggered planting of larger orange trees will screen the perimeter wall. The Project entrance includes monument signage and enhanced pavement.

Public views of the Project site along Alvarado Street would include streetscape landscaping, , Project landscaping fronting a retaining wall, and single-family residential homes beyond the wall, which would be developed to a similar mass, color, and height as surrounding existing residential uses. On the Alvarado

[5] *California Scenic Highway Mapping System.* California Department of Transportation. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ (accessed May 13, 2020).

Street frontage, Lots C and D will planted with a row of semi-dwarf orange trees (24-inch box) and other landscape material will be planted between the sidewalk and the split-face masonry block perimeter wall.

The proposed landscape plan, in tandem with the retention of the existing structures and landscaping/ groves on Parcels 1 and 2 and Parcel 3/Lot E, the retention of existing street features (rock curbs and street palms), and the preservation of the majority of existing frontage on both streets, allows for a visual transition from the existing on-site structures and groves to the proposed residential uses. While the Project would alter the visual character of the site, the preservation of existing features, coupled with the incorporation of open space (Lots A through E) and enhanced landscape buffering, mimics the existing pattern of land use adjacent to the site; therefore, implementation of the proposed Project would not generate a substantial degradation of the existing visual character or quality of public views of the site and its surroundings.

The proposed Project would be developed on a site that is designated as *Low Density Residential* land use pursuant to the City's General Plan and zoned as *R-S Suburban Residential District Single-Family Residential* pursuant to the City's Zoning Code. The proposed Project will be developed pursuant to the property development standards (Section 18.40.060 of the Redlands Zoning Code) of the *R-S Suburban Residential District Single-Family Residential* zone to ensure scenic quality of the site. The Project applicant has requested a Planned Residential Development Conditional Use Permit in order to subdivide future Parcel 3/Lot E. Proposed lots would range in size from 6,644 to 10,497 square feet, averaging 7,221 square feet. The development density of each of the proposed lots would be one dwelling unit per lot, as required by the zoning designation's development density. The residential units proposed for the Project would be no taller than one-story in height, which would be under the maximum building height of two-and-a-half stories or 35 feet tall, pursuant to the *R-S* zoning designation. Pertaining to development of fences, landscaping and walls on the Project site, the Project applicant would develop such features in compliance with Chapter 18.168 of the Redlands Zoning Code. The proposed Project would be designed to be consistent with surrounding neighborhoods that are already established around the Project site. The housing on the site would include three elevation styles to include Craftsman, Farmhouse, and Spanish Colonial architecture. Colored architectural exhibits of the proposed Project are included in **Appendix A**. These design elements would be complimentary of the surrounding visual character of the area and would be consistent with design guidelines in accordance with the City's General Plan and R-S Zoning. Therefore, impacts to the visual character or quality of the site and its surroundings would be **less than significant.** No mitigation is required.

d. Would the Project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Less than Significant Impact

Discussion of Effects: Currently, nighttime lighting is produced by surrounding residential development, street lighting, and vehicles on adjacent roadways. The proposed Project would add residential uses and vehicle trips that would incrementally increase ambient nighttime illumination in the area. The proposed Project would incorporate street and pedestrian lighting at entrances and exits to the neighborhood, street lights, and lighting on individual residential units. Lighting in the new open space would also be included as part of the Project.

All lighting associated with the Project would be shielded such that it would minimize light spillage onto adjacent properties in accordance with Development Standards established for the residential uses and City Municipal Code Chapters 5.24.020 (Register; Use; Lighting of Premises). Through compliance with City

zoning and municipal code regulations, lighting would not substantially affect daytime or nighttime views in the Project vicinity.

Glare also can be produced during the daytime and is usually associated with reflective building materials, such as glass, stainless steel, aluminum, and photovoltaic panels. Building materials for the proposed residential development would generally consist of painted facades, and wood siding. Glass windows would be incorporated into the new home design to be consistent with the architectural style of surrounding development in accordance with Development Standards established for the residential land use and zoning designations of the City of Redlands. On January 1, 2020 the California Solar Mandate went into effect requiring all new residential development (single-family and multi-family development) up to three stories in height to install an individual solar panel system for each residential unit. The residential units developed on the proposed Project site would include rooftop photovoltaic panels that would be incorporated as part of the Project design. In the past, such photovoltaic panels were a source of glare that could potentially affect daytime views, especially for aircraft flying in such areas. However, solar panels do not reflect substantial amount of sunlight, since sunlight would not produce electricity if reflected. In general, since the whole concept of efficient solar power is to absorb as much light as possible, while reflecting as little light as possible, standard solar panels produce less glare and reflection than does standard window glass. Technically, solar panels use "high transmission, low iron glass" which absorbs more light, producing smaller amount of glare and reflectance than normal glass does.[6] Based on this, installation of rooftop solar photovoltaic panels on the Project's residential units would not increase glare in the area.

It is not anticipated that future development would involve architectural elements with highly reflective materials. To reduce potential impacts from light or glare to less than significant levels, the Project site perimeter would be developed with drought-tolerant street trees, decorative landscaping, architectural features, and other streetscape design techniques to minimize light spillage onto neighboring areas in accordance with Development Standards established for residential land use and zoning and City Municipal Code Chapter 5.24.020 (Register; Use; Lighting of Premises). Additionally, the proposed Project would not utilize high gloss or reflective materials that would cause glare or reflection or generate excessive light. Therefore, impacts from new sources of substantial light or glare would be **less than significant**. No mitigation is required.

[6] Rodger D. Colton, Fisher, Sheehan and Colton Public Finance and General Economics, Assessing Rooftop Solar PV Glare in Dense Urban Residential Neighborhoods: Determining Whether and How Much of a Problem, Website: https://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/10/Colton-Roger-Assessing-Rooftop-Solar-PV-Glare-in-Dense-Urban-Residential-Neighborhoods.pdf. November 16, 2014.

3.2 AGRICULTURE AND FORESTRY RESOURCES

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for or cause rezoning of forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

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?

Less than Significant Impact.

Discussion of Effects: The most recent agricultural land conversion data for San Bernardino County is for the 2014-2016 period.[7] **Table B: San Bernardino County Agricultural Land Conversion 2014-2016** shows the land converted in San Bernardino County during the 2014-2016 period. For the two-year period from 2014 to 2016, San Bernardino County experienced a 2,406 acre decrease in the amount of agricultural land inventory in the County.

[7] California Department of Conservation, Division of Land Resource Protection, Table A-28 San Bernardino County 2014-2016 Land Use Conversion. Website: https://www.conservation.ca.gov/dlrp/fmmp/Pages/SanBernardino.aspx. Accessed May 12, 2020.

Table B: San Bernardino County Agricultural Land Conservation 2014–2016

Part I Summary and Change by Land Use Category						
	Total Acreage Inventoried		2014–2016 Acreage Changes			
Land Use Category	2014	2016	Acres Lost (-)	Acres Gained (+)	Total Acreage Changed	Net Acreage Changed
Prime Farmland	11,715	11,323	850	458	1,308	-392
Farmland of Statewide Importance	5,702	5,770	184	252	436	68
Unique Farmland	2,675	2,738	92	155	247	63
Farmland of Local Importance	605	562	118	75	193	-43
Important Farmland Subtotal	**20,697**	**20,393**	**1,244**	**940**	**2,184**	**-304**
Grazing Land	900,735	898,633	3,629	1,527	5,156	-2,102
Agricultural Land Subtotal	**921,432**	**919,026**	**4,873**	**2,467**	**7,340**	**-2,406**
Urban and Built-up Land	282,905	286,407	419	3,921	4,340	3,502
Other Land	244,700	243,604	2,540	1,444	3,984	-1,096
Water Area	510	510	0	0	0	0
Total Area Inventoried	**1,449,547**	**1,449,547**	**7,832**	**7,832**	**15,664**	**0**

Source: California Department of Conservation, Division of Land Resource Protection, Table A-28 San Bernardino County 2014-2016 Land Use Conversion. Website: https://www.conservation.ca.gov/dlrp/fmmp/Pages/SanBernardino.aspx. Accessed May 12, 2020.

Most notable is the loss of 2,102 acres of Grazing Land and the net loss of 304 acres of Important Farmland from the County's inventory. Between 2014 and 2016 there was a loss of 392 acres of Prime Farmland within San Bernardino County. The City of Redlands, according to the Redlands General Plan EIR, as of 2016, has an Important Farmland inventory totaling 3,003.1 acres (Prime Farmland, Farmland of Statewide Importance and Unique Farmland).[8] The City of Redlands has a Prime Farmland inventory totaling 2,072.6 acres.

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) designates 7.19 acres of the 8.81 acre site as Prime Farmland. The 0.82-acre grove on Parcel 3/Lot E will be retained; therefore, 6.37 acres of Prime Farmland within the Project site would be converted to a non-agricultural use. This would represent a 0.06 percent decrease in the 2016 Prime Farmland inventory (11,323 acres) within San Bernardino County and a 0.30 percent decrease in the Prime Farmland inventory (2,072.6 acres) within the City of Redlands.

In order to determine if the conversion of the site's Prime Farmland would result in a significant impact, the California Department of Conservation Land Evaluation and Site Assessment (LESA) Model was prepared for the Project (**Appendix B: LESA Model**). The LESA Model is composed of the Land Evaluation (LE) portion, which measures soil quality, and the Site Assessment (SA) portion, which evaluates other

[8] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.2 Agricultural Resources. , Table 3.2-1: Farmland Acreages by Classification pg. 3.2-2. This amount includes areas within the City of Redlands and within the Sphere of Influence of the City of Redlands.

factors that contribute to the site's agricultural importance, such as parcel size and on-site farming investments. A single LESA score is generated for a given project after all of the individual Land Evaluation and Site Assessment factors have been scored and weighted. The Final LESA Score is based on a scale of 100 points, with a given project being capable of deriving a maximum of 50 points from the LE factors and 50 points from the SA factors. The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the environmental documentation phase of the CEQA review process. Scoring thresholds are based upon both the total LESA score as well as the component LE and SA subscores. In this manner the scoring thresholds are dependent upon attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score, but a very low SA score, or vice versa). The LESA Model Thresholds are as follows:

- 0 to 39 Points – Not Considered Significant
- 40 to 59 Points – Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
- 60 to 79 Points – Considered Significant unless either LE or SA subscore is less than 20 points
- 80 to 100 Points – Considered Significant

The Final LESA Score for the proposed Project was calculated at 54.75 total points, with an LE subscore of 39.75 points and an SA subscore of 15 points. Based on the Final LESA Score and the subscores, the LESA Model indicates that impacts pertaining to the conversion of 6.37 acres of Prime Farmland to non-agricultural use would be **less than significant**. No mitigation measures are warranted.

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

No Impact

Discussion of Effects: According to the City of Redlands Zoning Code the proposed Project is zoned as *R-S Suburban Residential District Single-Family Residential* and is not zoned for agricultural use.

The City of Redlands, in recent years, has witnessed a decline in land under Williamson Act Contracts. As of 2014, there were 170 acres of land under Williamson Act Contracts within the City of Redlands and a total of 621.6 acres of Williamson Act land within the City's sphere of influence.[9] Figure 3.2-1 of the City of Redlands *Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan (General Plan EIR)* indicate that the proposed Project site is not under a Williamson Act Contract.[10] Development of the Project site would therefore not conflict with existing agricultural zoning or a Williamson Act contract. **No impact** would occur and no mitigation is required.

c. Conflict with existing zoning for or cause rezoning of forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

[9] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.2 Agricultural Resources. pg. 3.2-2.

[10] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.2 Agricultural Resources. Figure 3.2-1: Farmland Classifications.

No Impact

Discussion of Effects: The General Plan land use designation for the Project site is Low Density Residential and the zoning designation is R-S Suburban Residential District Single-Family Residential. As such, the Project site is not zoned as forest land, timberland, or timberland zoned for Timberland Production. The proposed Project would not conflict with such zoning designations; as such, **no impact** would occur. No mitigation is required.

d. Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact

Discussion of Effects: No forest land use occurs on the Project site; therefore, the Project would not result in the conversion of forest land to a non-forest use. **No impact** would occur and no mitigation is required.

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?

Less Than Significant Impact

Discussion of Effects: The Project site is currently occupied by two single-family residential units, a Carriage Home/Barn, associated outbuildings, and a citrus orchard planted with approximately 700 orange trees. The citrus orchard on the Project site is currently active; however, it is not considered in the active agricultural land inventory within the City of Redlands under the General Plan. As of 2016, the City of Redlands had a 1,985 acre inventory of land that is under citrus cultivation. Implementation of the proposed Project would result in the conversion of approximately 6.0 acres of citrus groves to a non-agricultural use. This would result in a 0.30 percent reduction in Redland's overall citrus grove inventory. Figure 3.2-2: Citrus Groves of the General Plan EIR does not identify Project site as being occupied by citrus grove. The General Plan also notes that the City of Redlands is planting new groves to offset the loss of citrus groves throughout the City and a Citrus Preservation Commission was established in 1996 to make recommendations and advise the City Council regarding acquisition, improvement, preservation and retention of citrus properties within the City. Although implementation of the proposed Project would result in the loss of active citrus orchards within the City of Redlands, the loss would be nominal. Furthermore, since the Project site is privately owned, the active citrus orchard on the site does not contribute to the citrus grove inventory of the City. Finally, this action would result in a Project-specific conversion of agricultural land to non-agricultural uses while retaining existing citrus trees on 2.81 acres on site (Parcels 1 and 2 and Parcel 3/Lot E) but would not affect any off-site citrus groves.

The Project site is not occupied by forest land and would not result in the conversion of forest land to non-forest land use at off-site locations. Overall, impacts would be **less than significant** and no mitigation measures would be needed.

3.3 AIR QUALITY

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b.	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	☐	☐	☒	☐
c.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d.	Result in other emissions, such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

To evaluate air pollutant emissions from the construction and operation of the Project, modelers conducted the California Emission Estimator Model (CalEEMod) analysis, which is the current air quality and land use emissions model recommended by the California Air Resources Board (ARB) for evaluating emissions from land use projects. Emissions from construction were based on the CalEEMod default for the construction phase scenario and anticipated opening date schedule. Emissions from operation of the proposed Project include vehicle emissions, area source emissions, and energy use emissions. The construction and operational emissions were then compared with the CEQA air quality significance thresholds from the South Coast Air Quality Management District (SCAQMD). A climate action plan service population matrix evaluation was conducted to determine whether or not the proposed Project would be consistent with the City of Redlands's Climate Action Plan.

The proposed Project is located in the City of Redlands, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the SCAQMD. The following analysis was obtained from the *Air Quality, Energy, and Greenhouse Gas Memorandum for the 301 West Palm Avenue Project* (**Appendix C: Air Quality/Energy/Greenhouse Gas Technical Memorandum**) prepared by LSA on May 14, 2020.

The SCAQMD, together with the California ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring stations closest to the site are the Redlands[11] and San Bernardino[12] Monitoring Stations, which monitors most air pollutant data, except for sulfur dioxide (SO_2), which were obtained from the Fontana station.[13] The air quality trends from these two stations are used to represent the ambient air quality in the vicinity of the proposed Project site. The ambient air quality data monitored at these stations within the past three years are listed in **Table C: Ambient Air Quality Monitored in Project Vicinity**.

[11] 500 N. Dearborn Street, Redlands, California 92374.
[12] 24302 4th Street, San Bernardino, California 92302.
[13] 14360 Arrow Highway, Fontana, California 92335.

Table C: Ambient Air Quality Monitored in the Project Vicinity

Pollutant	Standard	2016	2017	2018
Ozone (O_3) – Redlands Monitoring Station				
Maximum 1-hour concentration (ppm)		0.145	0.156	0.136
Number of days exceeded:	State: > 0.09 ppm	55	79	53
Maximum 8-hour concentration (ppm)		0.119	0.135	0.114
Number of days exceeded:	State: > 0.07 ppm	100	115	98
	Federal: > 0.07 ppm	97	114	94
Coarse Particulates (PM_{10}) – Redlands Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		72.8	77.0	70.1
Number of days exceeded:	State: > 50 µg/m^3	4	2	2
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		27.8	26.2	25.1
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	Yes
Fine Particulates ($PM_{2.5}$) – San Bernardino Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		53.5	38.2	30.1
Number of days exceeded:	Federal: > 35 µg/m^3	1	1	0
Annual arithmetic average concentration (µg/m^3)		11.1	11.4	11.1
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 12 µg/m^3	No	No	No
Carbon Monoxide (CO) – San Bernardino Monitoring Station				
Maximum 1-hour concentration (ppm)		2.2	2.7	1.2
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.7	2.5	1.3
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Nitrogen Dioxide (NO_2) – San Bernardino Monitoring Station				
Maximum 1-hour concentration (ppm)		0.060	0.066	0.057
Number of days exceeded:	State: > 0.18 ppm	0	0	0
	Federal: > 0.10 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.016	0.015	0.015
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2) – Fontana Monitoring Station				
Maximum 24-hour concentration (ppm)		0.0008	0.0011	0.0009
Number of days exceeded:	State: > 0.04 ppm	0	0	0
Maximum 1-hour concentration (ppm)		0.0063	0.0039	0.0029
Number of days exceeded:	State: > 0.25 ppm	0	0	0
	Federal: > 0.075 ppm	0	0	0

Source: EPA. Air Data Air Quality Monitors. Website: http://www.epa.gov/airdata/ad_maps.html (accessed April 2020).
µg/m^3 = micrograms per cubic meter
NA = not available
EPA = United States Environmental Protection Agency
ppm = parts per million

As shown in **Table C**, the State 1-hour O_3 standard was exceeded 53 to 79 times per year in the past 3 years. The federal 8-hour O_3 standard was exceeded 98 to 115 days per year in the past 3 years, and the State 8-hour O_3 standard was exceeded 94 to 114 times per year in the past 3 years. The State 24-hour PM_{10} standard were exceeded at least twice in the past 3 years and the federal 24-hour $PM_{2.5}$ standard were exceeded once in 2016 and 2017.

The ARB coordinates and oversees both State and federal air pollution control programs in the State and oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the United States Environmental Protection Agency (EPA) and local air quality districts. The ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by the ARB and EPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent three calendar years compared with the Ambient Air Quality Standards (AAQS).

Attainment areas may be:

- Attainment/unclassified ("unclassifiable" in some lists), which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;
- Attainment/maintenance (National Ambient Air Quality Standards [NAAQS] only), which violated an NAAQS that is currently in use (was nonattainment) in or after 1990, but now attains the standard and is officially re-designated as attainment by the EPA with a maintenance State Implementation Plan (SIP); or
- Attainment (usually only for California Ambient Air Quality Standards [CAAQS], but sometimes for NAAQS), which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Additional restrictions are imposed on nonattainment areas as required by the EPA. The air quality data collected from monitoring stations are also used to monitor progress in attaining air quality standards. **Table D: Attainment Status of Criteria Pollutants in the South Coast Air Basin** lists the attainment status for the criteria pollutants in the Basin.

Table D: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	N/A
O_3 8-hour	Nonattainment	Extreme Nonattainment[1]
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)
SO_2	Attainment	Unclassified/Attainment
Lead	Attainment[2]	Unclassified/Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB. Air Quality Standards and Area Designations. Website: http://www.arb.ca.gov/desig/desig.htm (accessed April 2020).

[1] Area has a design value of 0.175 ppm and above.

[2] Except in Los Angeles County.

ARB = California Air Resources Board
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ppm = parts per million
SO_2 = sulfur dioxide

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact

Discussion of Effects: The proposed Project site is in the South Coast Air Basin, which is managed by the SCAQMD. The EPA has designated the status of the Basin as nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under the CAAQS. Under the NAAQS, the EPA has designated the status of the Basin as nonattainment for O_3 and $PM_{2.5}$.

The SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. The applicable AQMP is the SCAQMD Final 2016 AQMP. The 2016 AQMP incorporates local General Plan land use assumptions and regional growth projections developed by SCAG to estimate stationary and mobile source emissions associated with projected population and planned land uses. If a new land use is consistent with the local General Plan and the regional growth projections adopted in the 2016 AQMP, then the added emissions are considered to have been evaluated, are contained in the 2016 AQMP, and would not conflict with or obstruct implementation of the regional 2016 AQMP.

The proposed Project is not considered a project of statewide, regional, or area-wide significance (e.g., large-scale projects such as airports, electrical generating facilities, petroleum and gas refineries, residential development of more than 500 dwelling units, or shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space) as defined in the California Code of Regulations.[14]

As previously noted, the residential development would construct 28 new single-family homes on a portion of the site that is currently occupied by a citrus grove. The Project is located on approximately 8.81-acre parcel at the corner of Palm Avenue and Alvarado Street in the City of Redlands, San Bernardino County. The existing parcel contains two single-family residential units, the Project applicant is proposing to retain the large home fronting Palm Avenue (Palm House), the smaller home facing Alvarado Street (Alvarado House), and the Barn/Carriage House immediately behind the Palm House. In addition, the orange groves at the southwest corner of the site would be retained. The Project applicant proposes to create a community of 28 single-family homes.[15] Since the proposed Project is consistent with the City's General Plan land use and zoning designation for single family residential[16] and would not generate any increase in population beyond that which has already been planned for by SCAG and the City, the proposed Project is consistent with the 2016 AQMP. Impacts would be **less than significant** and no mitigation is required.

b. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard?

Less than Significant Impact

Discussion of Effects: The Basin is currently designated nonattainment for the federal and State standards for O_3 and $PM_{2.5}$. In addition, the Basin is in nonattainment for the PM_{10} standard. The Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its

[14] California Code of Regulations Title 14, Division 6, Chapter 3, Article 13, §15206(b)).
[15] Diversified Pacific Communities (Project Applicant) Project Narrative. 2020.
[16] City of Redlands. 2020. Land Use Zoning. Website: https://www.cityofredlands.org/zoning (accessed in May 2020).

very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed Project.

The SCAQMD's *CEQA Air Quality Handbook* establishes suggested significance thresholds based on the volume of pollution emitted. According to the *Handbook*, any project in the Basin with daily emissions that exceed any of the following thresholds should be considered as having an individually and cumulatively significant air quality impact:

- 55 lbs. per day of VOC (volatile organic compounds) (75 lbs./day during construction);
- 55 lbs. per day of NOx (oxides of nitrogen) (100 lbs./day during construction);
- 550 lbs. per day of CO (carbon monoxide) (550 lbs./day during construction);
- 150 lbs. per day of PM_{10} (particulate matter with a diameter of 10 microns or smaller) (150 lbs./day during construction);
- 55 lbs. per day of $PM_{2.5}$ (particulate matter with a diameter of 2.5 microns or smaller) (55 lbs./day during construction); and
- 150 lbs. per day of SOx (oxides of sulfur) (150 lbs. /day during construction).

The most recent version of the CalEEMod (Version 2016.3.2) was used to calculate construction and operation emissions from development of the proposed Project (**Appendix C**).

No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the SCAQMD project-specific thresholds would also have a cumulatively considerable contribution to a significant cumulative impact.

Construction Emissions: During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by site leveling, trenching, paving, and other activities. Emissions from construction equipment are also anticipated and would include CO, NOx, VOC, directly-emitted $PM_{2.5}$ or PM_{10}, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction emissions were estimated for the Project using CalEEMod Version 2016.3.2, consistent with SCAQMD recommendations for the proposed Project. For purposes of air quality analysis, it is assumed that construction would happen in phases, and would include the following construction activities: demolition, site preparation, grading, building construction, paving, and architectural coatings (painting). Tentative Parcel Map (TPM 20185) would be subdivided into four parcels. As Parcels 1 and 2 and Parcel 3/Lot E will be retained in their current condition, the net Project build area is 6.00 acres. The maximum daily

disturbance on any day during construction is 3.00 acres during the grading phase. CalEEMod modeling and defaults are assumed for the construction activities, off-road equipment, on-road construction fleet mix and trip lengths. All off-road equipment over 50 horsepower rating would utilize EPA Tier 2 engines as required under the Nonroad Compression-Ignition Engines: Exhaust Emission Standards[17]. Fugitive dust emission control measure such as watering the exposed surface area would occur at least three times daily in accordance with the SCAQMD Rule 403. The proposed Project phases would begin construction in separate months to meet the proposed goal of operational use in early 2022. During the first phase of construction (vegetation removal), approximately 478 orange trees on the northeastern and southeastern sides of the Project site would be removed. An estimated 93 truck trips would be associated with debris removal from the Project site, which was included in CalEEMod.

Table E: Short-Term Regional Construction Emissions identify the maximum daily emissions associated with construction activities during each phase, and indicate no criteria pollutant emission thresholds would be exceeded from construction of the proposed Project.

Table E: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	NOx	CO	SOx	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Demolition	1.37	34.00	25.54	0.04	0.64	0.92	0.13	0.92
Site Preparation	1.30	33.78	23.70	0.04	7.25	0.95	3.93	0.95
Grading	1.47	38.11	27.75	0.05	2.76	1.05	1.37	1.05
Building Construction	1.42	24.31	19.28	0.03	0.35	0.88	0.09	0.88
Paving	1.00	20.16	17.86	0.02	0.17	0.67	0.04	0.67
Architectural Coating	24.55	2.37	2.01	0.00	0.06	0.10	0.01	0.10
Peak Daily Emissions	**24.55**	**38.11**	**27.75**	**0.05**	**8.19**		**4.87**	
SCAQMD Thresholds	**75.00**	**100.00**	**550.00**	**150.00**	**150.00**		**55.00**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (May 2020).

Note: Numbers may appear to not sum correctly due to rounding.

CO = carbon monoxide lbs/day = pounds per day

NOx = nitrogen oxides $PM_{2.5}$ = fine inhalable particulate matter less than 2.5 microns in size

PM_{10} = coarse inhalable particulate matter less than 10 microns in size SCAQMD = South Coast Air Quality Management District

SOx = sulfur oxides VOCs = volatile organic compounds

Note: This table identifies construction emissions related to the clearance of 6.82 acres of existing grove and the construction of 30 residences. As the Project revisions will reduce both the area of disturbance and the number of units, the emissions cited in this table represent a worst-case scenario. It is reasonable to conclude the reduction in area of disturbance and number of units constructed will incrementally reduce the level of construction emissions and would not exceed any established SCAQMD emission threshold.

As shown in **Table E**, construction emissions associated with the Project would not exceed the SCAQMD's thresholds for VOC, NOx, CO, SOx, $PM_{2.5}$, and PM_{10} emissions. Therefore, construction of the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or State AAQS. Impacts would be **less than significant** and no mitigation is required.

[17] U.S. Environmental Protection Agency. 2016. Nonroad Compression-Ignition Engines: Exhaust Emission Standards.

Operational Emissions: Long-term air pollutant emissions associated with operation of the proposed Project include emissions from area, energy, and mobile sources. Area sources include architectural coatings, consumer products, and landscaping. Energy source emissions result from activities in buildings for which electricity and natural gas are used. Mobile-source emissions are from vehicle trips associated with operation of the Project.

Long-term operational emissions associated with the proposed Project were compiled. Trip generation rates used in CalEEMod for the proposed Project were based on the Project's trip generation estimates. The proposed Project would generate approximately 264 average daily trips (ADT).[18] The Project's projected operational emissions of criteria pollutants from Area, Energy, and Mobile sources are shown in **Table F: Project Operational Emissions**.

Table F: Project Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Project Area Sources	1.81	0.45	2.66	<0.01	0.05	0.05
Project Energy Sources	0.02	0.13	0.06	<0.01	0.01	0.01
Project Mobile Sources	0.49	2.57	6.59	0.03	2.08	0.57
Total Project Emissions	**2.31**	**3.16**	**9.31**	**0.03**	**2.14**	**0.63**
SCAQMD Thresholds	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2020).
Note: This table identifies operational emissions resulting from the occupation of 30 residences. As the Project revisions will reduce the number of units and correspondingly, the number of vehicle trips, the emissions cited in this table represent a worst-case scenario. It is reasonable to conclude the reduction in the number of units and vehicle trips will incrementally reduce the level of operational emissions and would not exceed any established SCAQMD emission threshold.

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

The results shown in Table F indicate the proposed Project would not exceed the significance criteria for daily VOC, NOx, CO, SOx, PM_{10}, or $PM_{2.5}$ emissions. The table also shows net increase in criteria pollutants is minimal and does not exceed SCAQMD the significance criteria. In addition, the proposed Project would be consistent with regulatory measures such as Title 13-Section 2449 of the California Code of Regulations; and CalRecycle/Green Building Program regulations would also be implemented for the proposed Project. Through compliance with these regulations as part of applicable policy designed to reduce emissions, the proposed Project would not exceed any SCAQMD threshold or contribute to a substantial increase in regional air emissions. Therefore, operation of the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or State AAQS. Impacts would be **less than significant** and no mitigation is required.

c. Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact

Discussion of Effects: Localized Significance Thresholds (LSTs) are developed based upon the size or total area of the emissions source from the construction equipment activities, the ambient air quality levels in

[18] Per the rates in the VMT/Trip Gen Memorandum, 28 SFR at 9.44 daily trips/unit = 264 daily trips.

each SRA in which the emission source is located, and the distance to the sensitive receptor. The nearest residential homes (i.e., single-family residences) are located approximately 25 feet east of the Project site. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each SRA. As identified above, for the proposed Project, the appropriate SRA for the LST is SRA 35 (East San Bernardino Valley).

LSTs only apply to CO, nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ emissions during construction and operation at the discretion of the lead agency. Screening-level analysis of LSTs is only recommended for construction activities at project sites that are approximately 5 acres or less. The proposed Project site has a construction surface area of 6.00 acres, however; the maximum daily disturbance to the proposed Project site on any given day is 3 acres, during the grading phase. Therefore, screening-level analysis of LSTs for 3 acres was used for construction and operational activities.

Localized significance is determined by comparing the on-site-only portion of the construction and operational emissions with emissions thresholds derived by the SCAQMD to ensure pollutant concentrations at nearby sensitive receptors would be below the LST threshold established by the SCAQMD. **Tables G: Project Localized Construction Emissions** and **Table H: Project Localized Operational Emissions** indicate the construction and operational LST analyses of the CalEEMod results.

Table G: Project Localized Construction Emissions

Source	Pollutant Emissions			
	NOx (lbs/day)	**CO (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
On-Site Emissions	38.00	27.00	8.00	4.80
LST Thresholds	203.00	1,474.00	9.30	6.30
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2020).
SRA 35, based on 3 acre construction disturbance daily area.

CO = carbon monoxide
ppm =parts per million
$\mu g/m^3$ =microgram per cubic meter air
LST = localized significance threshold
NO_2 = nitrogen dioxide
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table H: Project Localized Operational Emissions

Source	Pollutant Emissions			
	NOx (lbs/day)	**CO (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
On-Site Emissions	0.58	3.00	0.15	0.08
LST Thresholds	270.00	2,075.00	4.00	3.00
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2020).
SRA 35, based on 5 acre operational daily area

CO = carbon monoxide
ppm =parts per million
$\mu g/m^3$ =microgram per cubic meter air
LST = localized significance threshold
Nox = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

As detailed above in **Tables G** and **H**, emissions would not exceed LST thresholds. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations.

Although Project-level NOx emissions would generate ozone precursor emissions, these levels would not exceed any established SCAQMD daily emission thresholds. The Project's peak operation NOx emissions amount to approximately 38 pounds per day. Due to the incremental size of the proposed Project, the level of emissions is not sufficiently high to use a regional modeling program to correlate health effects on a basin-wide level. On a regional scale, the quantity of emissions from the Project is incrementally minor. Because the SCAQMD has not identified an accurate method to quantify health impacts from small projects; and due to the size of the Project, it is speculative to assign any specific health effects to small Project-related emissions. Therefore, impacts related to substantial pollutant concentrations for construction and operation would **be less than significant**. No mitigation is required.

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

Less than Significant Impact

Discussion of Effects: Other emissions, including nuisance odors, may occur during the operation of diesel-fueled equipment during construction and operation of the Project. Heavy-duty equipment on the Project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease to occur after individual construction is completed. No other sources of objectionable odors have been identified for the proposed Project, and no mitigation measures are required.

SCAQMD Rules 402, 403, and 431.2, as well as Title 13, Section 2449(d)(d) of the California Code of Regulations (CCR), require the Project applicant to include implementation of standard control measures for fugitive dust and diesel equipment emissions. Additionally, operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) are required to limit vehicle idling to five minutes or less; register and label vehicles in accordance with the ARB Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). Additionally, SCAQMD Rule 402 regarding nuisances states: "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." Adherence to these rules is standard regulatory policy for all development and would reduce impacts from other emissions such as nuisance odors to **less than significant** levels. No mitigation is required.

3.4 BIOLOGICAL RESOURCES

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. 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?	☐	☒	☐	☐
b. 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 U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. 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?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

The information and analysis in this section has been prepared based on the information from the memorandum prepared by ECORP on February 8, 2019 titled *Results of a Biological Reconnaissance Survey Conducted at the Approximately 10-Acre Palm Property, in Redlands, California* (**Appendix D: Biological Reconnaissance Survey**).

a. 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?

Less than Significant with Mitigation Incorporated

Discussion of Effects: The Project site is currently developed with two single-family residential units, a barn/carriage unit, associated accessory buildings, and an active citrus orchard occupied by 700 orange trees. The Project site is relatively flat and is occupied by one vegetation community, active orchard.

The Project site was subject to a general biological resources study, which included a literature review and database search as well as an on-site pedestrian survey conducted by a biologist on January 22, 2019.

The Project site does not provide suitable habitat for the 50 special-status plant species or the 46 special-status wildlife species (that appeared in the literature and database reviews) due to the Project site's long history of being heavily disturbed and developed. The plant species observed on the Project site were typical of the residential setting and included ornamental trees and shrubs, palm trees (*Washingtonia robusta*), rose bush (*Rosa* sp.), citrus trees (*Citrus sinensis*), black mustard (*Brassica nigra*), common dandelion (*Taraxacum officinale* ssp. *officinale*), and California poppy (*Eschscholzia californica*). The wildlife observed on the Project site were typical of the residential setting and the habitat present. Wildlife species observed during the biological reconnaissance survey included California towhee (*Melozone crissalis*), white-crowned sparrow (*Zonotrichia leucophrys*), Anna's humming bird (*Calypte anna*), mourning dove (*Zenaida macroura*), house finch (*Haemorhous mexicanus*) and American crow (*Corvus brachyrhynchos*).

While no breeding or nesting birds or raptors were observed within the survey area, the survey was conducted outside the typical breeding season. The vegetation on the Project site could provide nesting habitat for songbirds protected by the MBTA and California Fish and Game Code. If construction of the proposed Project occurs during the bird breeding season (typically February 1 through August 31), ground-disturbing construction activities could directly affect birds protected by the MBTA and their nests through the removal of habitat on the Project site and indirectly through increased noise, vibrations, and increased human activity. **Mitigation Measure BIO-1** requires that nesting bird pre-construction clearance surveys be conducted prior to any ground-disturbing or demolition activities.

Mitigation Measure BIO-1: **Pre-construction Nesting Bird Survey.** If construction or other Project activities are scheduled to occur during the bird breeding season (February through August for raptors and March through August for most migratory bird species), a pre-construction nesting bird survey shall be conducted by a qualified biologist to ensure that active bird nests, including those for the loggerhead shrike, will not be disturbed or destroyed. The survey shall be completed no more than three days prior to initial ground disturbance. The nesting bird survey shall include the Project area and adjacent areas where proposed Project activities have the potential to affect active nests, either directly or indirectly due to construction activity or noise. If an active nest is identified, a qualified biologist shall establish an appropriate disturbance limit buffer around the nest using flagging or staking. Construction activities shall not occur within any disturbance limit buffer zones until the nest is deemed inactive by the qualified biologist.

With implementation of **Mitigation Measure BIO-1**, the proposed Project would have a **less than significant impact with implementation of mitigation** on nesting birds.

b. 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 U.S. Fish and Wildlife Service?

No Impact

Discussion of Effects: The Project site does not contain riparian habitat or other sensitive natural communities. **No impact** would occur and no mitigation is required.

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

No Impact

Discussion of Effects: As part of the memorandum prepared by ECORP, the desktop review of the Project site and surrounding land did not identify any potentially jurisdictional features, hydric soils, or wetlands present on the site. No hydric soils, jurisdictional drainages, stream courses, and/or other water features were identified on the Project site during the field survey conducted in January 2019. **No impact** would occur and no mitigation is required.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant with Mitigation Incorporated

Discussion of Effects: Habitat fragmentation occurs when a single, contiguous habitat area is divided into two or more areas, or where an action isolates the 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 Project site is not identified as a regionally important dispersal or seasonal migration corridor. There would be no effects to downstream waters because there is no hydrological connection. The Project would not restrict or eliminate wildlife movement because it is already limited by surrounding urbanized development. Additionally, the Project site contains no critical habitat and is already developed. Due to the surrounding residential land uses, any potential surrounding habitat is already fragmented. The Project site is not directly or indirectly connected to natural habitats and does not provide resources necessary to support local or regional wildlife movement and migration. As detailed in response to Checklist Questions 3.4a and 3.4b, above, the Project site does not contribute habitat for the long-term conversation of wildlife. However, although no riparian habitat or other natural vegetation communities occur on site, citrus trees and ornamental vegetation on the Project site may provide nesting habitat for migratory birds. Therefore, with implementation of **Mitigation Measure BIO-1** for the protection of birds

pursuant to the MBTA, the proposed Project would have a **less than significant impact with implementation of mitigation** on the movement of native resident or migratory fish or wildlife species, native or migratory wildlife corridors, or native wildlife nursery sites.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact

Discussion of Effects: The City General Plan outlines policies that protect biological resources; however, these policies pertain to ecological areas such as San Timoteo Canyon, Live Oak Canyon, the Crafton Hills, and the Santa Ana River, Mill Creek, and other riparian areas within the City.[19] The Project site is in an urbanized neighborhood and is not located in an area identified by the City as having substantial ecological value.

Street trees and other trees in public domain within the City are managed pursuant to City Municipal Code Chapter 12.52 (Trees and Tree Protection along Streets and in Public Places). The City does not have local policies or ordinances pertaining to trees on private property.

Based on the condition and location of the Project site, development of the proposed Project would not conflict with any local policies or ordinances protecting biological resources. Impacts would be **less than significant** and no mitigation is required.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact

Discussion of Effects: The Project site does not lie within a proposed or adopted habitat conservation plan area. **No impact** or conflict would occur in regard to conservation plans and no mitigation is required.

[19] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Table ES-4, Impact 3.4-5. City of Redlands. July 21, 2017.

3.5 CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant with Mitigation Incorporated.

Discussion of Effects: Pursuant to §15064.5, the term "historical resource" shall include:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources [California Register] (Pub. Res. Code §5024.1, Title 14 California Code of Regulations [CCR], Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852) including the following:

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

B. Is associated with the lives of persons important in our past.

C. 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.

D. Has yielded, or may be likely to yield, information important in prehistory or history.

A "substantial adverse change" to a historical resource, according to Public Resources Code (PRC) §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

A Project-specific cultural resources assessment and historical resources evaluation was conducted for the Project site and included archaeological and historical records searches, an intensive pedestrian survey of the Project site, sacred land file search, and Native American tribal scoping (**Appendix E: Cultural Resources Assessment/Historical Resources Evaluation**). The records search revealed that 16 cultural resource investigations have occurred within a one-mile radius of the Project site resulting in the recording of 458 built cultural resources. The Project site has not been subject to a previous cultural resources assessment and no cultural resources have been previously identified within its boundaries. During the research and fieldwork, the England/Attwood Estate was identified as currently occupying the Project site. The England/Attwood Estate has been evaluated for the California Register of Historical Resources (California Register) listing eligibility and for listing as a City of Redlands Historic District. The assessment conducted for the Project recommends that the England/Attwood Estate is eligible for listing in the California Register under Criterion 1, 2, and 3, and that this historic resource retain integrity of location, setting, design, materials, workmanship, feeling and association. The assessment also recommends that the England/Attwood Estate is eligible for listing as a City Historic District. Any proposed Project activities would be consistent with "plans for rehabilitation to ensure that the undertaking maintains consistency with the Secretary of the Interior Standards for the Treatment of Historic Properties". The Standards are intended to pertain to rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility. Project activities would also be consistent with the City Historic Preservation program. Project design would be carried out in consultation with a professional that meets the U.S. Secretary of the Interior Professional Qualification Standards for Historic Architecture.

The Secretary of the Interior's Standards for the Treatment of Historic Properties provide guidelines for the preservation and rehabilitation of historic resources. Adherence to these standards is accepted as a method of avoiding significant adverse effects to historic buildings while allowing their continued use. The main purpose of the proposed Project is to develop 28 new single-family residential units while preserving the integrity of the potential England/Attwood Estate historical resource. The proposed Project would adhere to the standards in the following ways:

- **Standard 1.** A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationship.

  The Project site was originally used as a rural-residential complex with a commercial orange grove, agricultural buildings, residential buildings, and landscaping. The commercial agricultural features of the property are economically infeasible in 2020 and have been discontinued. The historical residential use will be maintained. Distinctive materials, features and spaces of the contributing buildings will be maintained by the Project

  With its nine-acre parcel holding contributing features including a main residence, cottage, carriage house, gravity-flow irrigation system, citrus grove, and palm border, the England/Attwood Estate exhibits all the important character-defining features of the Redlands citrus estate complexes. Its spatial relationships are distinguishing features of this unique local property type: a formal row of palms marks the street-facing property boundaries, the main house is set back from the street and accessed via a landscaped drive, a carriage house is sited behind the main house, and orange groves provide an aesthetic setting. The cottage is set well back from Palm Avenue but clearly visible from Alvarado Street, giving it visual prominence while communicating its status as secondary to the main

residence. Distinctive spatial relationships between the contributing buildings and landscape features in their immediate vicinity will be maintained by the Project.

Roughly two-thirds of the orchard will be removed to allow for the development of the new residential units behind and to the side of the historic buildings. Many of trees removed would be located near the rear of the Project site; the estate's most visible orange trees and those closest to the historic buildings will be retained. Removal of the trees northeast of the main residence along Palm Avenue will produce a visible change to the aesthetic setting. Mature orange trees will be preserved on the parcels that will hold the historic buildings as well as the corner of Palm Avenue and Alvarado Street.

Therefore, the appearance of the orchard from Palm Avenue and Alvarado Street will be only moderately altered, and it is most important trees (those that provide the immediate aesthetic setting for the historic buildings) will be retained. One contributing feature of the property, the irrigation system/weir, will be demolished by the Project, but it is a functional feature that is not visible from the public right of way. Therefore, the conversion from agricultural/residential to solely residential use will require minimal change to distinctive materials, features, spaces and spatial relationships as required by Standard 1.

- **Standard 2.** The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.

  The historic character of the Project site would be retained and preserved by retention of all significant agricultural features, decorative features of the historic landscape, and a portion of the historic orange groves. Distinctive materials and decorative features of historic buildings would be preserved. (No alterations to contributing historic buildings are proposed and therefore a detailed discussion of historic materials and architectural features will not be presented here.) New construction is at the side and behind historic buildings and therefore would not result in alterations to any spatial relationships. Important spatial relationships that would be maintained include the formal row of palms marking the street-facing property boundaries, the main house set back from the street and accessed via a landscaped drive, carriage house sited behind the main house, and orange groves providing an aesthetic setting. The cottage is set well back from Palm Avenue but clearly visible from Alvarado Street, giving it visual prominence while communicating its status as secondary to the main residence. Strategic retention of the most visible portions of the orange groves would allow the Project site to convey its historic character as a family-owned and occupied citrus orchard while allowing for reuse of a portion of the land. The historic character of the Project site would therefore be retained and preserved despite the loss of a portion of the orchard and of the historic irrigation system.

- Standard 3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

  The Project site would be recognized as a physical record of its time, place and use, and a false sense of historical development would not be created. This would be accomplished by constructing new houses to the side and behind the existing complex of buildings and its landscape setting. The Project proposes that historic buildings would be preserved in their historic forms.

- **Standard 4.** Changes to a property that have acquired historic significance in their own right will be retained and preserved.

  Contributing features of the Project site (except the England House) have retained their original forms and exhibit no changes that have acquired historic significance. The circa 1915 remodel of the England

House was performed by an important local contractor in a recognized historic architectural style and was part of the historic development of the Project site. This change was undertaken during the period of significance, and has acquired historic significance in its own right and would be preserved.

- **Standard 5.** Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

  Distinctive materials, features, and finishes of all contributing buildings would be preserved. These features include the Prairie-style architecture of the England House with its port cochere, wide eaves, and decorative brackets; the Queen Anne architecture of the England Cottage with its gable-on-hip bellcast roof, ornamental windows, and dentil moulding; and the Carriage House with its decorative cupola and gables. Original materials on these buildings including original wood windows, paneled doors, sliding barn doors, and siding would also be preserved.

- **Standard 6.** Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

  Most historic features of the district are in good condition and do not require repair or replacement. If windows or portions of siding on the contributing buildings are found to be severely deteriorated, they would be replaced in kind with matching materials and design.

- **Standard 7.** Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

  No chemical treatments would be utilized. If physical treatments are required, the gentlest means possible would be used.

- **Standard 8.** Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

  Archaeological resources were not identified during systematic archaeological survey. High surface visibility, and severe disturbances related to historic leveling of the site and maintenance and upkeep indicate that the discovery of significant archaeological resources is not likely. Despite the low likelihood, discovery of archaeological resources is possible.

- **Standard 9.** New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

  The new single-family residences are at the rear of the property at a minimum are located 100 feet from contributing buildings and would read as unrelated construction. New buildings have been carefully designed with single-story height and other features to make them visually unobtrusive. They are modest in scale and would not visually overwhelm the historic district contributors. In addition, because of the retention of a substantial portion of the historic orchard, new construction is screened from the historic district and visibility would be limited.

- **Standard 10.** New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

If the proposed new single-family residential units were removed in the future, the essential form and integrity of the historic property would be unimpaired.

One structure (the irrigation flume) that is a contributor to the potential historic district would be demolished by the proposed Project. Although the loss of this feature would have a negative impact on the integrity of the historic district, when viewed in the context of the district as a whole this effect is relatively minor. The England House, Carriage House, England Cottage, landscaping features, and much of the historic orchard would all be retained and preserved by the proposed Project. These contributing resources would retain sufficient physical characteristics to clearly convey the historic identity of the property as a family-owned and –occupied commercial citrus orchard, allowing the historic district to retain all aspects of historic integrity.

The concrete masonry footing associated with the England Estate is located along the southeast property boundary. It is in good condition. The footing ranges from six to eighteen inches in height at different points along its length. Steel poles with chain link fencing are installed along the tops of the footing to create a taller property boundary. The Cultural Resources Assessment confirms that this feature is a "non-contributor, unknown construction date, altered outside the historic period"; therefore, its removal would not result in a significant effect to the integrity of the overall site.

Pursuant to the analysis of the standards above, the proposed Project has been carefully designed to conform to the Secretary of Interior's Standards for the Treatment of Historic Properties. Therefore, the proposed Project would not cause a substantial adverse change to a historical resource pursuant to CEQA (14 CCR § 15126.4(b) (1)). Furthermore, under CEQA, potential impacts to historical resources are considered to be below a significant level pertaining to implementation of the proposed Project.

Lots A and B located at the Palm Avenue entrance encompass 10,930 and 9,972 square feet, respectively. Lots A and B will be replanted with up to four rows of orange trees (24-inch box and 15 gallon) and other landscape material between the sidewalk and split-face masonry block perimeter wall. The depth of Lots A and B and the staggered planting of larger orange trees will screen the perimeter walls. On the Alvarado Street frontage, Lots C and D will planted with a row of semi-dwarf orange trees (24-inch box) and other landscape material will be planted between the sidewalk and the split-face masonry block perimeter wall. Lot E, located at the corner of Palm Avenue and Alvarado Street, encompasses approximately 0.82 acre (35,698 square feet) of existing orange grove (approximately 65 trees). A conservation easement will be established on this parcel and the existing trees on Parcel 3/Lot E will be retained to continue the current aesthetic condition at this corner. Appropriate fencing will be provided along the boundary of Parcel 3/Lot E to maintain the privacy/security of the grove.

Overall, 2.81 acres[20] (122,309 square feet) or 32 percent of the 8.81-acre site will be retained in its current condition. Approximately 1.38 acres, including the Parcel 3/Lot E grove (0.82 acre), and Lots A through D (collectively 0.55 acre) will be set aside permanently and maintained as open space. It is currently planned to leave these areas open to the public and residents of the HOA. Approximately 122 (17 percent) of the existing orange trees on site will be retained on Parcels 1 and 2 and Parcel 3/Lot E. The retention of existing structures, landscaping, and orange trees on these parcels results in the preservation of 59 and 54 percent of the existing roadway frontage along Palm Avenue and Alvarado Street, respectively. Existing rock curbs and palm trees along the entirety of both street frontages will be retained.

[20] Parcels 1-2 and Parcel 3 (Lot E).

In recognition of the location and context of the on-site features, the following actions will be implemented by the Project Applicant as a part of the proposed Project:

- Prior to construction activities, including grove removal or ground disturbance, the Applicant shall complete a report similar to a Historic American Landscapes Survey (HALS)[21] Level III report for the entire site. While the HALS program is federal requirement and there is no federal nexus for this requirement, the Applicant shall develop the HALS-like report using measured drawings and interpretive drawings, written histories, and large-format black-and-white photographs and color photographs. HALS documentation may be used for scholarly research, interpretation and education, and may provide a basis for preservation easements. The HALS-like document shall be provided to the City of Redlands and the A.K. Smiley Public Library.
- The Applicant intends to install an interpretive kiosk that highlights information derived from the HALS-like report. The location of the interpretive kiosk shall be such to enable views by the general public. The design, location, and information on the interpretative kiosk will be approved by the City.

Since the proposed Project does not result in a substantial adverse change to a significant resource, impacts would be **less than significant**.

The intensive pedestrian survey of the Project site did not identify any additional prehistoric or historical archaeological remains or built-environment resources then what has been described above. Due to the proximity of Native American sites, there is some potential for the proposed Project to unearth previously undocumented cultural resources during construction. Therefore, **Mitigation Measures CUL-1** through **CUL-5** are required in the event that unanticipated cultural material is unearthed on the Project site.

Mitigation Measure CUL-1: Prior to the issuance of a grading permit, the Project proponent shall retain the services of a Registered Professional Archaeologist, to monitor all initial ground-disturbing activities related to the Project. The archaeologist shall meet U.S. Secretary of the Interior Professional Qualifications for Archaeology.

In the event that prehistoric or historic-period archaeological cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and the Project archaeologist shall assess the find and make recommendations regarding the treating of the discovery. Impacts to significant archaeological deposits shall be avoided if feasible, but if such impacts

[21] The Historic American Landscapes Survey (HALS) is a federal program within the National Park Service that is charged with creating a permanent, publically accessible record of significant cultural and designed landscapes in the United States and its territories. Landscapes vary in size from small gardens to national parks of several thousand acres. In character, they range from designed to vernacular, rural to urban, and agricultural to industrial landscapes. Estate gardens, cemeteries, farms, quarries, mills, nuclear test sites, suburbs, and abandoned settlements all may be considered under the broad category of cultural landscapes. Today, many of these landscapes have historic value and merit documentation and recognition. Fortunately, due to developments in landscape history and preservation, a consistent and effective process is in place for recording these sites. The primary goal of the HALS program is to provide a lasting record of landscapes that reflect the types, periods, and patterns of landscape development indicative of our varied American culture. Once HALS documentation packages are completed, the Prints and Photographs Division of the Library of Congress preserves them for posterity and makes them available to the general public. Excerpt from *Historic American Landscapes Survey Guidelines for Historical Reports*, United States Department of the Interior, January 2005 *at:* https://www.nps.gov/hdp/standards/HALS/HALSHistoryGuidelines.pdf.

cannot be avoided, the deposits shall be evaluated for their eligibility to the California Register of Historical Resources. If the deposits are not California Register eligible, no further protection of the find is necessary. If the deposits are eligible, impacts shall be avoided or mitigated. Acceptable mitigation may consist of, but is not necessarily limited to, systematic recovery and limited nondestructive analysis of archaeological deposits, recording the resource, preparation of a report of findings.

Mitigation Measure CUL-2: If significant archaeological cultural resources, as defined by CEQA Section 15064.5(a), or Tribal Cultural Resources (artifacts of Native American origin), are discovered, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with Participating Tribe(s), the Project proponent, and the City of Redlands. The Project proponent shall secure monitoring agreements with the consulting tribe(s), prior to the recommencement of work, and the Project archaeologist and tribal monitors shall monitor the remainder of the Project site and implement the Plan accordingly.

Mitigation Measure CUL-3: A final monitoring report with methods and findings shall be submitted to the Project proponent, City of Redlands, Participating Tribes, and the South Central Coastal Information Center.

Mitigation Measure CUL-4: The final report must describe the type, disposition, and significance of the resource(s), document the impacts to the resource(s), describe mitigation measures and how they were fulfilled. Work on the other portions of the Project site outside of the buffered area may continue during the assessment period with the implementation of **Mitigation Measure CUL-2**. Details in the Monitoring and Treatment Plan shall include:

a. Project grading and development scheduling.

b. A monitoring schedule developed in coordination with the Project proponent, the qualified archaeologist, and Native American Tribal Monitors representing the Participating Tribes.

c. Safety requirements, duties, scope of work, and the qualified archaeologist's authority to stop and redirect grading activities in coordination with the City of Redlands, Project proponent, and construction contractor.

d. The protocols and stipulations that the Project proponent, City of Redlands, Participating Tribes, and qualified archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

e. In a confidential appendix, include the daily/weekly monitoring notes from the qualified archaeologist. The final report shall be completed within 60 days of the completion of ground disturbing activities.

Mitigation Measure CUL-5: In the event that human remains (or remains that may be human) or funerary objects are discovered at the Project site during grading or earthmoving, the construction contractors shall immediately stop all activities within 100 feet of the find. The Project proponent shall then inform the San Bernardino County Coroner and the City of Redlands Police Department immediately, and the coroner shall be permitted to examine the remains as required by California Health and Safety Code Section 7050.5(b). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If human remains are determined as those of Native American origin, the Project proponent shall comply with the state relating to the disposition of Native American burials that fall within the jurisdiction of the NAHC (PRC Section 5097). The coroner shall contact the NAHC to determine the most likely descendant(s) (MLD). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The disposition of the remains shall be overseen by the most likely descendant(s) to determine the most appropriate means of treating the human remains and any associated grave artifacts. The specific locations of Native American burials and reburials will remain proprietary and not disclosed to the general public. The locations will be documented by a qualified archaeologist in conjunction with the MLD, City, and Project proponent, and a report of findings will be filed with the South Central Coastal Information Center (SCCIC), the City of Redlands Development Services Department, and the appropriate Native American Tribe(s).

Implementation of **Mitigation Measures CUL-1** through **CUL-5** would reduce impacts to known, unknown, or potential cultural resources that may be located within the Project site to less than significant levels.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant with Mitigation Incorporated

Discussion of Effects: Please refer to response to Checklist Question 3.5a. Implementation of **Mitigation Measures CUL-1** through **CUL-5** would reduce impacts to known, unknown, or potential archaeological resources that may be located within the Project site to less than significant levels.

c. Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact

Discussion of Effects: No known human remains are present on the Project site; however, Native American sites have been recorded in close proximity to the Project site. Implementation of **Mitigation Measure CUL-5** would reduce impacts to human remains to **less than significant**.

3.6 ENERGY

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

The energy following analysis was obtained from the *Air Quality, Energy, and Greenhouse Gas Memorandum for the 301 West Palm Avenue Project* (**Appendix C**) prepared by LSA on May 14, 2020.

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

Less than Significant Impact

Discussion of Effect: The Project's consumption of energy during construction and operation is calculated via CalEEMod, as detailed in **Appendix C**.

Construction-Period Energy Use. Based on CalEEMod defaults the anticipated construction schedule assumes that the proposed Project would be built in approximately 14 months. The proposed Project would require demolition, site preparation, grading, building construction, paving, and architectural coating activities during construction.

Construction of the proposed Project would require energy for the manufacture and transportation of construction materials, preparation of the site for grading and building activities, and construction of the building. All or most of this energy would be derived from non-renewable resources. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. However, construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the Project. Energy (i.e. fuel) usage on the Project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Construction of the proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and construction-related would be **less than significant**. No mitigation is required.

Construction of the Project would not involve the consumption of natural gas. The construction-related equipment would not be powered by natural gas and no natural gas demand is anticipated during construction.

Transportation energy represents the largest energy use during construction and would occur from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction worker vehicles that would use petroleum fuels (e.g., diesel fuel and/or gasoline). Therefore, the analysis of

energy use during construction focuses on fuel consumption. The use of energy resources would fluctuate according to the phase of construction. The majority of construction equipment during grading would be gasoline-powered or diesel-powered, and the later construction phases would be electricity-powered. Construction trucks and vendor trucks hauling materials to and from the Project site would be anticipated to use diesel fuel, whereas construction workers traveling to and from the Project site would be anticipated to use gasoline-powered vehicles. Fuel consumption from transportation uses depends on the type and number of trips, vehicles miles traveled, fuel efficiency of vehicles, and travel modes.

Diesel fuel usage from construction off-road equipment was calculated using the CalEEMod assumptions used in the Air Quality and Greenhouse Gas Analysis. The CalEEMod utilized the construction equipment shown in **Table I: Construction Off-Road Equipment**. Average brake-specific fuel consumption and diesel fuel properties (heating value and density) from the EPA AP-42 were used to obtain a fuel per horsepower-hour factor. These factors and other calculations are shown in **Table J**: **Off-Road Construction Equipment Diesel Fuel Usage**, which shows total fuel usage from construction off-road equipment is estimated to be 70,277 gallons, the consumption of which would occur over the 14 months of construction. As also shown in **Table J**, the greatest amount of fuel (22,568 gallons) would be consumed by off-road equipment during the building construction.

Table I: Construction Off-Road Equipment

Phase	Off-road Equipment Type	Amount	Usage Hour/ Day	Total Usage Days	Total Usage Hours/ Equipment
Demolition	Excavators	3	8	20	480
	Concrete/Industrial Saw	1	8	20	160
	Rubber Tired Dozers	2	8	20	320
Site Preparation	Rubber-Tired Dozers	3	8	10	240
	Tractors/Loaders/ Backhoes	4	8	10	320
Grading	Excavators	1	8	20	160
	Graders	1	8	20	160
	Rubber-Tired Dozers	1	8	20	160
	Tractors/Loaders/ Backhoes	3	8	20	480
	Scrapers	1	8	20	160
Building Construction	Cranes	1	7	230	1,610
	Forklifts	3	8	230	5,520
	Generator Sets	1	8	230	1,840
	Tractors/Loaders/ Backhoes	3	7	230	4,830
	Welders	1	8	230	1,840
Paving	Pavers	2	8	20	320
	Paving Equipment	2	8	20	320
	Rollers	2	8	20	320
Architectural Coating	Air Compressors	1	6	20	120

Source: *CalEEMod Model compiled by LSA*, May 2020

Table J: Off-Road Construction Equipment Diesel Fuel Usage

Phase	Off-road Equipment Type	Horsepower[1]	Load Factor[1]	Total Usage Hours/ Equipment	Horsepower-Hour[2]	Fuel Usage (gallons)[3]
Demolition	Excavators	158	0.38	480	28,819	1,476
	Concrete/ Industrial Saw	81	0.73	160	9,461	484
	Rubber Tired Dozers	247	0.4	320	31,616	1,619
Total Fuel Use: Demolition (gallons)						**3,579**
Site Prep	Rubber-Tired Dozers	247	0.4	240	23,712	1,214
	Tractors/ Loaders/ Backhoes	97	0.37	320	11,485	588
Total Fuel Use: Infrastructure (gallons)						**1,802**
Grading	Excavators	158	0.38	160	9,606	615
	Graders	187	0.41	160	12,267	785
	Rubber-Tired Dozers	247	0.4	160	15,808	1,012
	Tractors/ Loaders/ Backhoes	97	0.37	480	17,227	1,103
	Scrapers	367	0.48	160	28,186	1,443
Total Fuel Use: Grading (gallons)						**4,958**
Building Construction	Cranes	231	0.29	1,610	107,854	5,522
	Forklifts	89	0.20	5,520	98,256	5,031
	Generator Sets	84	0.74	1,840	114,374	5,856
	Tractors/ Loaders/ Backhoes	97	0.37	4,830	82,207	4,209
	Welders	46	0.45	1,840	38,088	1,950
Total Fuel Use: Building Construction (gallons)						**22,568**
Paving	Pavers	130	0.42	320	17,472	895
	Paving Equipment	132	0.36	320	15,206	779
	Rollers	80	0.38	320	9,728	498
Total Fuel Use: Paving (gallons)						**2,172**
Architectural Coating	Air Compressors	78	0.48	120	4,493	230
Total Fuel Use: Building Construction and Architectural Coating (gallons)						**230**
Total Fuel Usage (gallons)						**35,309**

Source: *CalEEMod Model compiled by LSA, May 2020*

[1] Load factor and horsepower are CalEEMod defaults for the equipment type and were obtained from the *Air Quality Impact Analysis.*

[2] Horsepower-Hour is the basis for the fuel calculation. HP-Hour is calculated using the following formula: HP-Hour = Total Hours × LF × HP.

[3] Off-road mobile source fuel usage is calculated using a fuel usage rate of 0.0512 gallons of diesel per horsepower (HP)-hour. This is calculated based on diesel.

Note: This table identifies energy usage related to the clearance of 6.82 acres of existing grove and the construction of 30 residences. As the Project revisions will reduce both the area of disturbance and the number of units, the energy usage cited in this table represent a worst-case scenario. It is reasonable to conclude the reduction in area of disturbance and number of units constructed will incrementally reduce energy usage and would not in a more wasteful or inefficient usage of energy compared to the slightly larger project.

Total fuel consumption in San Bernardino County totaled 2.19 billion gallons in 2018. Vehicle consumption accounts for the majority of the total fuel consumption in California. In 2018, 1,241 million gallons of diesel fuel and 94.9 million gallons of gasoline were consumed from vehicle trips in San Bernardino based on EMFAC2017. Compared to the annual fuel consumption from vehicle trips in San Bernardino County, the peak annual fuel consumption of 35,309 gallons from off-road construction equipment during Project construction would be small fraction of the annual fuel consumption in San Bernardino County.

Fuel use from construction trucks and construction worker vehicles traveling to the Project site was based on the estimated number of trips that Project construction would generate and the average trip distance using the CalEEMod assumptions Air Quality and GHG Analysis. Fuel efficiencies were estimated for the first full year of construction (2021) using the ARB EMFAC2017 model as shown in **Table K: Construction Truck and Construction Worker Vehicle Fuel Efficiency**. It should be noted that calculating the fuel efficiency of vehicles for the year 2021 is a conservative approach because fuel efficiency is expected to continue to increase and improve during construction as new fuel economy standards are established. Construction on-road vehicle fuel consumption calculations are shown in **Table L: Construction Truck Fuel Use (Diesel Fuel Use)** for construction trucks and construction worker vehicles.

Table K: Construction Truck and Construction Worker Vehicle Fuel Efficiency

Vehicle Type	Vehicle Class	EMFAC2017 Outputs[2]		Diesel Fuel Efficiency[3] (miles/gallon)
		Diesel Fuel Consumption (1,000 gallons/day)	VMT (miles/day)	
Construction Truck	MHDT	727.46	7,535,147.50	10.36
	HHDT	1,774.20	11,545,819.98	6.51
Construction Worker Vehicle	LDA	46.12	2,185,238.84	47.38
	LDT1	0.43	9,520.38	22.14
	LDT2	15.84	548,393.87	34.62

Source: EMFAC2017 (CARB 2020)

[1] For construction trucks assumes 50 percent HHDT and 50 percent MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks. For construction worker vehicles assumes 50 percent LDA, 25 percent LDT1, and 25 percent LDT2 vehicles, consistent with assumptions in CalEEMod for worker vehicles.

[2] EMFAC2017 was run for South Coast Air Basin for the construction year 2021. Data was aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

HHDT = Heavy Heavy Duty Trucks MHDT = Medium Heavy Duty Trucks VMT = vehicle miles traveled

Table L: Construction Truck Fuel Use (Diesel Fuel Use)

Phase	Total Trips	Total Days	Trip Length (miles)	Total Vehicle Miles Traveled (VMT)	Diesel Fuel Efficiency (miles/gallon)	Fuel Usage (gallons/ year)
Demolition	93	20	6.90	642	10.36	62
Building Construction	9	230	6.90	14,283	6.51	2,194
					Total Diesel Fuel Usage	2,256

Source: CalEEMod 2016.3.2 and EMFAC2017 (CARB 2019)

[1] Assumes 50 percent HHDT and 50 percent MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks.

[2] EMFAC2017 was run for South Coast Air Basin for the construction years 2020–2021. Data were aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

HHDT = Heavy Duty Trucks MHDT = Medium Heavy Duty Trucks VMT = vehicle miles traveled

Table M: Construction Worker Vehicle Gasoline Fuel Use

Phase	Total One-Way Trips/ Day	Total Days	Trip Length (miles)	Total Vehicle Miles Traveled (VMT)	Gasoline Fuel Efficiency (miles/gallon)	Fuel Usage (gallons/year)
Demolition	15	20	14.70	4,410	22.0	200
Site Prep	18	10	14.70	2,646	22.0	120
Grading	18	20	14.70	5,292	22.0	241
Building Construction	26	230	14.70	87,906	22.0	3,996
Paving	15	20	14.70	4,410	22.0	200
Architectural Coating	5	20	14.70	1,470	22.0	67
					Total Gasoline Fuel Usage	**4,824**

Sources: CalEEMod 2016.3.2 and EMFAC2017 (CARB 2019)

As shown in **Table L** total diesel fuel consumption would be 2,256 gallons from construction truck trips. As shown in **Table M: Construction Worker Vehicle Gasoline Fuel Use** total gasoline consumption would be 4,824 gallons from construction worker vehicle trips. During the construction period, an estimated 7,080 gallons of fuel would be consumed. In 2018, 1,241 million gallons of diesel fuel and 94.9 million gallons of gasoline were consumed from vehicle trips in San Bernardino County based on EMFAC2017. Therefore, peak annual gasoline demand generated by on-road trips during construction would be less than 0.001 percent of the total annual gasoline and diesel fuel consumption in San Bernardino County.

Impacts related to energy use during construction would be temporary and would be relatively small in comparison to the San Bernardino County's overall usage and the State's available energy sources. For these reasons, Project construction would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be **less than significant** and no mitigation is required.

Operation: Energy consumed by the proposed Project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the Project.

Energy and natural gas consumption was estimated for the Project using the CalEEMod results in the Air Quality and Greenhouse Gas Analysis prepared for the proposed Project. The proposed buildings would be constructed to CALGreen standards, which were included in CalEEMod inputs. Electricity, natural gas, and gasoline usage estimates associated with the operation of the proposed Project are shown in **Table N: Estimated Annual Energy Use of Proposed Project**.

Table N: Estimated Annual Energy Use of Proposed Project

Land Use	Electricity Use (kWh/year)	Natural Gas (kBTU/year)	Residences Gasoline Vehicles (gallons/year)
Single Family Residential	246,363	527,283	43,988
Open Space	0	0	N/A

Source: California Emissions Estimator Model (CalEEMod). Compiled by LSA. May 2020.
kWh = kilowatt hours
kBTU = Thousand British Thermal Units
Note: This table identifies the energy usage resulting from the occupation of 30 residences. As the Project revisions will reduce the number of units, the emissions cited in this table represent a worst-case scenario. It is reasonable to conclude the reduction in the number of units will incrementally reduce energy usage and would not result in a significant waste or inefficient use of energy resources.

As shown in **Table N**, proposed uses on the site would generate a total of 246,363 kilowatt-hours (kWh) of electricity per year. In addition, the Project would result in energy usage associated with motor vehicle

gasoline to fuel Project-related trips. The proposed Project would result in an increase of 264 average daily trips and would have an annual VMT of 967,737. Using the 2015 fuel economy estimate of 22 mpg, the proposed Project would result in the consumption of approximately 43,988 gallons of gasoline per year.[22]

Electricity is provided in the State through a complex grid of power plants and transmission lines. In 2018, California's in-state electric generation totaled 194,842 gigawatt-hours (GWh); the State's total system electric generation, which includes imported electricity, totaled 285,488 GWh.[23] Population growth is the primary source of increased energy consumption in the State; due to population projections, annual electricity use is anticipated to increase by approximately 1 percent per year through 2027.[24] The Project's net electricity usage would total less than 0.01 percent[25] of electricity generated in the State in 2018, which would not represent a substantial demand on available electricity resources.

As shown in **Table N**, the estimated potential increased natural gas demand associated with the proposed Project is 572,283 thousand British Thermal Units (kBTU) per year compared to the existing uses at the Project site. Total natural gas consumption in San Bernardino County in 2018 was 500 billion kBTUs. Therefore, natural gas demand associated with the proposed Project would be less than 0.001 percent of San Bernardino County.

The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 mpg in 1980 to 22.0 mpg in 2015.[26] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007, which originally mandated a national fuel economy standard of 35 mpg by the year 2020, and would be applicable to cars and light trucks of Model Years 2011 through 2020.[27] In early August 2018, the EPA and Department of Transportation issued a new ruling, Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which would freeze the fuel economy goals to the 2021 target of 37 mpg for model years 2021 through 2026.[28]

As stated previously, implementation of the proposed Project would increase the Project-related annual gasoline demand by 43,988 gallons. However, new automobiles purchased by patrons and employees driving to and from the Project site would be subject to fuel economy and efficiency standards applied throughout the State. As such, the fuel efficiency of vehicles associated with the Project site would increase throughout the life of the Project. Therefore, implementation of the proposed Project would not result in a substantial increase in transportation-related energy uses.

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22 967,737 VMT per year ÷ 22 mpg = 43,988 gallons of gasoline per year.

23 California Energy Commission. Total System Electric Generation. https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html, accessed May 2020.

24 California Energy Commission. California Energy Demand 2018-2030 Revised Forecast. https://efiling.energy.ca.gov/URLRedirectPage.aspx?TN=TN222287_20180120T141708_The_California_Energy_Demand_20182030_Revised_Forecast.pdf, accessed May 2020.

25 Calculation: 0.29 GWh (proposed Project) / 194,842 GWh (generated in State in 2018) = < 0.01 percent.

26 U.S. Department of Transportation. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." https://www.bts.gov/archive/publications/national_transportation_statistics/table_04_23/, accessed April 13, 2020.

27 U.S. Department of Energy. "Energy Independence & Security Act of 2007." https://www.afdc.energy.gov/laws/eisa, accessed May 2020.

28 U.S. Department of Transportation. Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule. https://www.nhtsa.gov/corporate-average-fuel-economy/safe.

In summary, construction and operation of the proposed Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Consumption of energy resources as a result of implementation of the proposed Project would be comparable to other residential neighborhoods in the City of Redlands. Impacts would be **less than significant** and no mitigation would be required.

b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less than Significant Impact

Discussion of Effect: In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The CEC recently adopted the 2017 Integrated Energy Policy Report.[29] The 2017 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The 2017 Integrated Energy Policy Report covers a broad range of topics, including implementation of SB 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to SB 1383), updates on Southern California electricity reliability, the natural gas outlook, and climate adaptation and resiliency.

As indicated above, 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 Project's total impact on regional energy supplies would be minor, the proposed Project would not conflict with or obstruct California's energy conservation plans as described in the CEC's 2017 Integrated Energy Policy Report.

The proposed Project would be required to comply with the California Building Code (CBC) and California Green Building Standards Code (CALGreen Code) pertaining to energy and water conservation standards in effect at the time of construction. Therefore, the proposed Project would be consistent with applicable plans related to renewable energy and energy efficiency. Impacts would be **less than significant** and no mitigation is required.

[29] California Energy Commission. 2017. *2017 Integrated Energy Policy Report.* Publication Number: CEC-100-2017-001-CMF.

3.7 GEOLOGY AND SOILS

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. 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?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication #42.

No Impact

Discussion of Effects: The proposed Project site is not located within the boundaries of an Earthquake Fault Zone for fault rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act of 1972, and there are no known active or potentially active faults that traverse the Project site.[30] The *Preliminary Geotechnical Evaluation* Report that was prepared for the proposed Project (**Appendix F: Preliminary Geotechnical Evaluation Report**) indicates that the potential for active fault rupture at the Project site is considered to be very low. In the absence of any on-site active faults, **no impact** related to fault rupture would occur on the Project site and no mitigation is required.

ii. Strong seismic shaking?

Less than Significant Impact

Discussion of Effects: The Project site is within a seismically active area, where earthquakes have the potential subject the Project to very strong seismically related ground shaking during the anticipated operational life of the Project.[31] The nearest known fault in proximity to the Project site is the Crafton Hills Fault Zone (Redlands fault), approximately 0.22 mile south of the Project site. The regionally significant San Andreas Fault Zone is approximately 5.4 miles northeast of the Project site.[32]

The extent of ground shaking associated with an earthquake is dependent upon the size of the earthquake and the geologic material of the underlying area. All future construction and development within the Project site would be required to comply with applicable provisions of the 2019 California Building Code (CBC) and the City's building regulations. Proper engineering design and construction in conformance with the 2019 CBC standards and Project-specific geotechnical recommendations (**Standard Condition GEO-1**) would ensure that seismic ground shaking would be **less than significant.** No mitigation is required.

Standard Condition: No mitigation is required; however, the following Standard Condition is a regulatory requirement that would be implemented to ensure impacts related to seismic activity remain less than significant.

Standard Condition GEO-1: **Compliance with applicable California Building Code and Project-specific Geotechnical Recommendations.** Prior to the approval of grading and/or building permits, the Project applicant shall provide evidence to the City of Redlands 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 2019 California Building Code (or the current CBC at the time of City review)

[30] Petra Geosciences, *Preliminary Geotechnical Evaluation Proposed 30-Lot Residential Development Approximately 8.8-Acre Site at 301 West Palm Avenue City of Redlands, San Bernardino County, California,* February 15, 2019.

[31] *Ibid.*

[32] *Ibid.*

and the recommendations cited in the Project-specific geotechnical investigation. This measure shall be implemented to the satisfaction of the Director of the City of Redlands Development Services Department, Building and Safety Division, or designee.

Adherence to the measures identified in the geotechnical investigation, as well as the 2019 CBC (or current CBC at the time of City review) and other requirements identified and required by the City, would ensure ground shaking hazards remain **less than significant.** No mitigation is required.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact

Discussion of Effects: Liquefaction is a phenomenon that occurs when strong seismic ground shaking causes soils to collapse from a sudden loss of cohesion and undergo a transformation from a solid to a liquefied state. There are three basic factors that must exist concurrently in order for liquefaction to occur:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions;
- A relatively loose silty and/or sandy soil; and
- A relatively shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that would allow positive pore pressure generation.

According to the Project-specific geotechnical report (**Appendix F**), San Bernardino County has identified the Project site within a low liquefaction susceptibility zone. Based on the lack of shallow groundwater and medium dense to very dense nature of the older alluvial fan deposits underlying the Project, the potential for liquefaction to occur is considered very low. Accordingly, the potential for liquefaction-induced lateral spreading and settlement is also considered to be very low. Secondary effects of seismic activity which may occur at the site include ground subsidence, ground lurching and lateral spreading. The probability of occurrence of each type of seismically induced ground failure is dependent on the severity of the earthquake, distance from the fault, topography of the site, subsoil and groundwater conditions at the site. According to the Project-specific *Preliminary Geotechnical Evaluation* report the potential for ground lurching, lateral spreading and similar seismic-related ground failure is considered very low. Through incorporation of **Standard Condition GEO-1**, impacts from seismically induced ground failure would be **less than significant** and no mitigation is required.

iv. Landslides?

No Impact

Discussion of Effects: According to the Project-specific geotechnical report, evidence of landslides and/or slope instabilities was not observed on the Project site. Due to the property's flat topography, the absence of significant nearby slopes or hills, and the planned site grading in accordance with **Standard Condition GEO-1**, **no impacts** from landslides or slope instabilities at the Project site would occur. No mitigation is required.

b. Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact

Discussion of Effects: Mapped soils on the site are Greenfield sandy loam, 2 to 9 percent slopes.[33] Construction at the proposed Project site would disturb surface soils and make them susceptible to erosion from wind and water. In order to address the potential for erosion, the Project is required to implement Best Management Practices (BMPs) during the construction phase that would reduce erosion in accordance with National Pollutant Discharge Elimination System (NPDES) regulations. These BMPs would be selected as part of the Storm Water Pollution Prevention Plan (SWPPP), which is required to address erosion and discharge impacts associated with the proposed on-site grading.

The Project must also comply with the City's grading permit requirements, which would ensure that construction practices include measures to protect exposed soils such as limiting work to dry seasons, covering stockpiled soils, and use of straw bales and silt fences to minimize off-site sedimentation. In addition, the Project site would be covered with asphalt, concrete, and landscaping materials during operations; therefore, soil erosion would be none to minimal. Compliance with State and federal requirements, as well as with City grading permit requirements, would ensure that the proposed Project would have a **less than significant** impact related to soil erosion or loss of topsoil. No mitigation is required.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact

Discussion of Effects: According to the Project-specific geotechnical report, evidence of landslides and/or slope instabilities was not observed on the Project site. Due to the property's flat topography, the absence of significant nearby slopes or hills, and the planned site grading in accordance with **Standard Condition GEO-1**, **no impacts** from landslides or slope instabilities at the Project site would occur. No mitigation is required.

The geotechnical report studied the groundwater level at the Project site and in the vicinity of the Project site. Groundwater was not encountered at a depth of 51.5 feet below ground surface (bgs) based on deep boring that occurred on the Project site. Groundwater levels recorded from a well 6,000 feet to the northwest of the Project indicate water levels to be at 199 feet bgs. Based on the lack of shallow groundwater underlying the property, the potential for liquefaction to occur is considered very low. Accordingly, the potential for liquefaction-induced lateral spreading and settlement is also considered to be very low.

The earth underlying the Project site consists of shallow topsoil and unconsolidated, near surface young alluvial fan deposits. Such materials in their present state are not considered suitable for support of fill or structural loads. Foundations and footings are expected to settle less than one inch. Through

[33] *Web Soil Survey, San Bernardino Southwestern Part, California (CA677).* United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (accessed May 13, 2020).

incorporation of **Standard Condition GEO-1**, impacts from ground settlement would be **less than significant** and no mitigation is required.

A maximum subsidence of approximately 0.10 to 0.20 feet may be anticipated as a result of the scarification and recompaction of the exposed bottom surfaces within the soil removal areas of the Project site. Through incorporation of **Standard Condition GEO-1**, impacts from subsidence and/or collapse would be **less than significant** and no mitigation is required.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant Impact

Discussion of Effects: On-site soils consist of Greenfield sandy loam, 2 to 9 percent slopes. This type of soil does not exhibit expansive characteristics. In addition, the Project-specific geotechnical report includes a test of the expansion index of the on-site soils and concluded the near-surface on-site soils have a very low expansion potential. The expansive potential of these materials is not considered to pose a hazard for the proposed Project. Impacts would be **less than significant** and no mitigation is required.

e. 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

Discussion of Effects: The proposed Project would be connected to existing wastewater collection and conveyance facilities owned and operated by the City. There are existing 8-inch collection sewer lines beneath West Palm Avenue and Alvarado Street, and the Project would construct an 8-inch sewer lateral to interconnect to the City's sewer system on West Palm Avenue and Alvarado Street. Therefore, septic tanks would not be necessary. Because the proposed Project would not include the installation of septic tanks or alternative wastewater disposal systems, **no impact** would occur. No mitigation is required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation Incorporated

Discussion of Effect: The Project site is located near the central portion of a localized old alluvial fan deposits of the late to middle Pleistocene era generally surrounded by very old axial valley deposits of the middle to early Pleistocene era. Pleistocene alluvium and Holocene alluvium deposits underlying several areas of the City have been identified as having varying potentials to yield fossils of importance. Vertebrate land mammal fossils have been discovered in parts of the City, including the fossils of a mammoth, ground sloth, camel, bison, horse, and deer. It should be noted that the Project site is already occupied by structures and a 700 orange tree citrus orchard; as such, the Project site was previously graded when these features were initially developed.

General Plan Objective OSC-7.1, Policy P3 requires the appropriate protection, evaluation, and recovery of any potential paleontological resource to a less than significant level. Although the site and surrounding area have been heavily disturbed and no known paleontological resources are known to exist on site, because of the citywide potential for paleontological conditions, unknown/undiscovered resources could be encountered during on-site grading or construction activities. **Mitigation Measure GEO-1** has been identified to reduce any paleontological resource impacts to a less than significant level.

Mitigation Measure GEO-1: Prior to commencement of any grading activity on the Project site, the applicant shall retain a qualified paleontologist, subject to the review and approval of the City Planner or designee. The qualified paleontologist shall attend the pre-construction meeting and be on site during all rough grading and other significant ground-disturbing activities.

In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontology monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).

With implementation of **Mitigation Measure GEO-1** impacts to paleontological resources would be **less than significant**.

3.8 GREENHOUSE GAS EMISSIONS

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The following greenhouse gas emissions analysis was obtained from the *Air Quality, Energy, and Greenhouse Gas Memorandum for the 301 West Palm Avenue Project* (**Appendix C**) prepared by LSA on May 14, 2020.

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact

Discussion of Effects: State *CEQA Guidelines Section 15064(b)* provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." Climate change is a global issue and is described in the context of the cumulative environment. Therefore, the Project is considered in the context of multiple sectors and the combined efforts of many industries, including development. The primary GHG emissions generated by the Project would be CO_2. This analysis represents an estimate of the Project's GHG emissions through the quantification of CO_2 emissions (**Appendix C**). The following Project activities were analyzed for their contribution to global CO_2 emissions.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the 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), the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where it 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 climate action plan, 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-Level 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, the SCAQMD requires an assessment of GHG emissions. The SCAQMD, under Option 1, is proposing a "bright-line" screening-level threshold of 3,000 MT CO_2e/year for all land use types or, under Option 2, 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 SCAQMD'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 related to 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. The SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per capita efficiency targets.

City CAP CO_2e per Capita Threshold. This section evaluates potential significant impacts related to GHG using the Tier 2 approach in compliance with the City of Redlands CAP for implementation of the proposed Project. Therefore, in order to demonstrate consistency with the City's CAP, the Project must meet the GHG emissions targets of 6.0 MT CO_2e per capita per year. As such, those projects that garner a GHG emissions targets of 6.0 MT CO_2e per capita per year would not require mitigation of project specific GHG emissions. Consistent with *CEQA Guidelines*, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

Construction and operation of the Project development would generate GHG emissions. The following activities associated with the proposed Project could contribute directly or indirectly to the generation of GHG emissions:

- **Construction Activities:** During construction of the Project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs (e.g., CO_2, CH_4, and N_2O). Furthermore, CH_4 is emitted during the fueling of heavy equipment. The Project would satisfy green building measure by installing daylighting rooms such that all of the conditioned space would have daylight using windows, solar tubes, skylights or equivalents.
- **Motor Vehicle Use:** Transportation associated with the proposed Project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.
- **Gas, Electricity, and Water Use:** Natural gas use results in the emission of two GHGs: CH_4 (the major component of natural gas) and CO_2 (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive. CalEEMod defaults were used to estimate these emissions from the Project. The proposed Project would also install low-flow water fixtures in consistent with 2019 CALGreen, and efficient irrigation systems in compliance with the modern water efficient landscape ordinance.
- **Solid Waste Disposal:** Solid waste generated by the Project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. CH_4 is 25 times more potent a GHG than CO_2. However, landfill CH_4 can also be a source of

energy. In addition, many materials in landfills do not decompose fully and the carbon that remains is sequestered in the landfill and not released into the atmosphere. The proposed Project would implement the statewide goal of meeting the 75 percent recycling program on-site.[34]

GHG emissions associated with Project construction would occur over the short term from construction activities and would consist primarily of emissions from equipment exhaust. Long-term regional emissions would also be associated with Project-related new vehicular trips and stationary-source emissions (e.g., natural gas used for heating and electricity usage for lighting). The calculations presented below includes construction emissions in terms of CO_2 and annual CO_2e GHG emissions from increased energy consumption, water usage, solid waste disposal, and estimated GHG emissions from vehicular traffic that would result from implementation of the proposed Project. The following Project activities were analyzed for their contribution to global CO_2e emissions.

Construction Emissions. Construction activities produce combustion emissions from various sources, such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. The construction GHG emission estimates were calculated using CalEEMod Version 2016.3.2, which indicates the Project's GHG emissions during the anticipated 14 months construction period between December 2020 and January 2022. As indicated in **Table O: Estimated Construction Greenhouse Gas Emissions**, Project construction would result in total emissions of 444.86 MT of CO_2e, which would be amortized to 14.83 MT of CO_2e over 30 years.

Table O: Estimated Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions, CO_2e (Metric Tons per Year)
Demolition 2020	39.24
Site Preparation 2020	5.32
Site Preparation 2021	12.40
Grading 2021	41.41
Paving 2021	321.89
Paving 2022	4.32
Architectural Coating 2022	17.26
Total Project Emissions	**444.86**
Total Construction Emissions Amortized over 30 years	**14.83**

Source: Compiled by LSA (May 2020).
Note: Numbers may appear to not sum correctly due to rounding.
CO_2e = carbon dioxide equivalent

Operational Emissions. The operational GHG emissions estimates were also calculated using CalEEMod. Activities such as natural gas, electricity, water use, solid waste disposal, and motor vehicle use are expected to contribute directly and/or indirectly to the generation of GHG emissions from operation of the proposed Project. **Table P: Estimated Operational GHG Emissions (Metric Tons per Year)** details the new operational emission associated with the proposed Project.

[34] CalRecycle 2017. Website: https://www2.calrecycle.ca.gov/Publications/Details/1612 (Accessed May 5, 2020).

Table P: Estimated Operational GHG Emissions (Metric Tons Per Year)

Emissions Source	Operational Emissions			
	CO_2	CH_4	N_2O	CO_2e
Project Area Sources	6.63	<0.01	<0.01	6.68
Project Energy Sources	84.31	<0.01	<0.01	84.76
Project Mobile Sources	404.84	0.02	0	405.32
Project Waste Sources	1.79	0.11	0	4.44
Project Water Sources	10.42	0.05	<0.01	12.10
Total Project Operational Emissions				**513.30**
Amortized Construction Emissions				14.83
Loss of Sequestration (from Orange trees)				42.47
Total Net Annual Emissions				**555.77**
Project Population (number of residences)				96
CO_2e per capita				**5.79**
GHG Capita Threshold				**6.00**
Exceed?				**No**

Source: Compiled by LSA Associates, Inc. (May 2020).

Note: This table identifies operational GHG resulting from the development of 30 residences. As the Project revisions will reduce the number of units and correspondingly, the number of vehicle trips, the emissions cited in this table represent a worst-case scenario. It is reasonable to conclude the reduction in the number of units and vehicle trips will incrementally reduce the level of GHG emissions and would not exceed any established SCAQMD emission threshold.
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
N_2O = nitrous oxide

As discussed above, a Project would have less than significant GHG emissions if it would result in operations-related GHG emissions of less than 6.00 MT CO_2e per capita per year. As indicated in **Table P,** the proposed Project would have approximately 5.79 MT CO_2e per capita per year, which is below the City's CAP threshold of 6.00 MT CO_2e per capita per year. Therefore, impacts related to the generation of GHG emissions, either directly, indirectly or cumulatively, that may have a significant impact on the environment would be **less than significant**. No mitigation is required.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact

Discussion of Effects: The ARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and State air pollution control and climate change programs within California. In this capacity, the ARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The ARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment On December 5, 2017, the City of Redlands adopted a Climate Action Plan, to focus on adaptive GHG measures that reduce emissions through standard practice measures and help prepare the City for the impacts of climate change.

The City's CAP outlines tentative improvements to community accessibility for transportation alternatives, further reducing GHG emissions leading into the 2030 and 2035 reduction goals. The Redlands CAP) was

prepared concurrently with the General Plan (2017), and provides an analysis of GHG emissions to the year 2035. The CAP reinforces the City's commitment to reducing GHG emissions and demonstrates how the City will comply with State of California's GHG emission reduction standards. The CAP's GHG emission targets are based on CARB guidelines established in the 2017 Scoping Plan for local jurisdictions. The proposed Project would not generate GHG that would have a significant impact on the environment, and would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The City CAP contains an inventory of the City's GHG emissions, forecast of GHG emissions through 2035, offers monitoring and reporting processes to ensure targets are met, and options for reducing GHG emissions beyond State requirements. The proposed Project is required to comply with Title 13-Section 2449 of the CCR and the CalRecycle Sustainable (Green) Building Program regulations, which include implementation of standard control measures for equipment emissions. Adherence to these regulations, including the implementation of Best Available Control Measures (BACMs) is a standard requirement for any construction or ground-disturbance activity occurring within the South Coast Air Basin.

BACMs include, but are not limited to, requirements that the Project proponent utilize only low-sulfur fuel (i.e., having a sulfur content of 15 ppm by weight or less); ensure off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) limit vehicle idling to five minutes or less; register and label vehicles in accordance with the ARB Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). Additionally, the construction contractor will recycle/reuse at least 50 percent of the construction material (including, but not limited to, proposed aggregate base, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) and use "Green Building Materials," such as those materials that are rapidly renewable or resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the Project, in accordance with CalRecycle regulations.

Long-term operational emissions typically include emissions from use of consumer products, energy and water usage, vehicles, and residential land use emissions.

The proposed Project is required to comply with the City's CAP. The GHG evaluation demonstrates that the proposed Project is consistent with the City's CAP Update. Consistent with CEQA Guidelines, the proposed Project would be determined to have a less than significant individual and cumulative impact related to GHG emissions. Therefore, the proposed Project would not generate GHG that would have a significant impact on the environment, nor would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Associated impacts would be **less than significant** and no mitigation is required.

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	☐	☐	☒	☐

The following hazards and hazardous materials analysis was obtained from the *Phase I Environmental Site Assessment* (*Phase I ESA*) (**Appendix G: Phase I Environmental Assessment**) prepared by Hillman Consulting on November 20, 2018.

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact

Discussion of Effects: Construction of the Project has the potential to create a hazard to the public or environment through the routine transportation, use, and disposal of construction-related hazardous materials such as fuels, oils, solvents, and other materials. These materials are typical of materials delivered to construction sites. The United States Department of Transportation (USDOT) regulates the transport of hazardous materials and waste in connection with construction of the Project and would require carriers to register with the Department of Toxic Substances Control (DTSC). Additionally, the future residential uses of the site may include the storage and use of common hazardous materials such as paints, cleaners, batteries, and pesticides.

For the purposes of this analysis, it is assumed the proposed Project would not handle substances that may be acutely hazardous. However, the handling of hazardous materials or emission of hazardous substances, if present, would be in accordance with the 2015 Redlands Hazard Mitigation Plan.

Compliance with the 2015 Redlands Hazard Mitigation Plan would ensure the Project would have a **less than significant** impact to the public or environment from the routine transportation, use, and disposal of hazardous materials. No mitigation is required.

b. 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 Impact

Discussion of Effects: A *Phase I Environmental Site Assessment* (*Phase I ESA*) was prepared for the Project in accordance with the standards and procedures outlined in the American Society for Testing and Materials E 1527-13, as applicable. The Phase I ESA included the review of past studies conducted on the Project site, a records review of various environmental databases, local and State records, historical records, and interviews with present and, to the extent feasible, past owners, and an on-site field inspection. The purpose of the *Phase I ESA* is to identify, to the extent feasible, and pursuant to the processes prescribed therein, recognized environmental conditions in connection with the property.

"Recognized environmental conditions" (RECs) means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

The proposed Project site has been historically occupied by two single-family residential units and a citrus orchard since at least 1930. As part of the *Phase I ESA* prepared for the proposed Project, soil sampling was conducted to determine the levels of hazardous materials within the soil associated with the active orchard. The soil sampling indicated low levels of pesticides and heavy metals within the on-site soils; however, the amount were below residential screening levels. Based on these levels, construction activities associated with the proposed Project (i.e., grading, soil removal, etc.) would not release hazardous materials above threshold levels into the environment. As concluded by the *Phase I ESA* the

historical usage of the property as citrus orchard is not considered an REC in connection with the Project site. One pole mount transformer is located at the center of the Project site; however, no signs of leaking or staining were observed in the area of the transformer. Three empty 55-gallon drums were located at the rear side of the barn on the Project site. There were no spills or staining in the vicinity of the drums and they are not considered RECs in connection the proposed Project site. The Project site was also subject to a cursory review of Business Environmental Risks including: Asbestos-Containing Materials (ACM); Lead-Based Paint (LBP), Radon, and Mold/Microbial Damage all of which are summarized below:

- **Asbestos-Containing Material (ACM):** Due to the age of the on-site existing buildings, ACM may be present. There was limited access to the interior of one of the residential homes (827 Alvarado Street). Although not observed, the interior walls, carpet mastics, floor tile, and roofing materials may contain asbestos.
- **Lead-Based Pain (LBP):** Due to the age of the onsite existing buildings, LBP may be present. There was limited access to the interior of the residential units located at 827 Alvarado Street at the time of the *Phase 1 ESA* field reconnaissance. In general, exterior painted surfaces were observed to be in fair condition.
- **Radon:** The Project site is located in an area with a moderate potential for radon concentrations that exceed current EPA action guidelines. San Bernardino County is classified as a Zone 2 or "moderate risk" area for radon Based on slab on grade construction and forced air HVAC systems, radon is not considered an environmental concern on the Project site at this time.
- **Mold/Microbial Damage:** During the *Phase I ESA* field surveys, a cursory visual screening of the accessed areas of the building for evidence of significant damage to building materials and finishes as result of moisture intrusion and/or mold/microbial growth. Field surveys did not observe any other evidence of significant problems with moisture intrusion or mold/microbial growth at the Project site. Field surveyors were unable to gain access to the single-family residential unit at 827 Alvarado Street on the Project site; however, no evidence of significant problems with moisture intrusion or mold/ microbial growth were observed.

The County of San Bernardino Fire Department, Hazardous Materials Division (CSBFD-HMD) maintains a list of underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers countywide. No records were found for the Project site.

The *Phase I ESA* contacted local and municipal agencies for pertinent records pertaining to the Project site, particularly with regard to potential environmental concerns such as petroleum storage tanks, storage and usage of hazardous substances and petroleum products, and/or known or suspected environmental contamination. Online research of government environmental regulatory databases where available, as well as a general cursory internet search of the Project site, for information indicative of an REC. The results indicated no REC was identified on the site pursuant to all of the databases that were researched.

A summary of the findings of the regulatory database review with regard to sites identified as located within the American Society for Testing Materials (ASTM) specified search distance surrounding the Project site is provided below:

- **Federal National Priority List (NPL):** No NPL listings were identified within a one-mile radius of the Property.

- **Federal Delisted NPL:** No DNPL listings were identified within a 0.5-mile radius of the Property.
- **Federal Superfund Enterprise Management System (SEMS) (formerly Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS)):** No SEMS listings were identified within a 0.5-mile radius of the Property.
- **Federal SEMS-ARCHIVE (former CERC-NFRAP):** No SEMS-ARCHIVE listings were identified within a 0.5-mile radius of the Property.
- **Federal Resource Conservation and Recovery Act Corrective Action Sites (RCRA-CORRACTS):** No CORRACTS listings were identified within a one-mile radius of the Property.
- **Federal RCRA-TSDF:** No TSD listings were identified within a 0.5-mile radius of the Property.
- **State/Tribal Hazardous Waste Sites:** No SHWS listings were identified within a one-mile radius of the Property on the EnviroStor database.
- **State/Tribal Landfill/Solid Waste Disposal Sites:** No SWF/LF listings were identified within a 0.5-mile radius of the Property.
- **State/Tribal Leaking Storage Tanks:** No LUST listings were identified within a 0.5-mile radius of the Property.
- **RWQCB SLIC Sites:** No SLIC listings were identified within a 0.5-mile radius of the Property.
- **State/Tribal Voluntary Cleanup Sites:** No VCP listing was identified within a 0.5-mile radius of the Property.
- **State/Tribal Brownfields:** No brownfields listings were identified within a 0.5-mile radius of the Property.

The property at 922 Cajon Street, approximately 583 feet east-northeast of the (cross to slightly upgradient) Project site was listed on the UST regulatory database. No database listings for reported spills, release, hazardous waste generation or site remediation were found for this site. Therefore, it is not considered to be a REC in connection with the proposed Project site. The property at 900 Salem Drive, approximately 1,079 feet east-northeast of the (cross to slightly upgradient) Project site was listed on the Underground Storage Tanks (UST) and San Bernardino County Permit regulatory database. The site is listed with an "Active "status dated 10/31/2018 for waste incidental UST operation. No database listings for reported spills, release, or records of violations were found for this site. Based on the distance, hydraulic gradient, this listing is not considered to be a REC in connection with the proposed Project site.

Based on the outcome of the *Phase I ESA*, the Project site does not currently contain any RECs, controlled RECs, or historical RECs, nor is it subject to vapor migration from any on-site or off-site sources. Compliance with local, State, and federal laws would reduce impacts directly, indirectly, and cumulatively from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment to **less than significant** levels. No mitigation is required.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact

Discussion of Effects: The nearest school facility in proximity to the Project site is Kingsbury Elementary School located at 600 Cajon Street approximately 113 feet to the northeast. The City works with the

Redlands Unified School District (RUSD) concerning the design of roads and other public improvements in and around school sites, and is responsible for fire, police, and public safety concerns involving all facilities within the City, including both public and private schools.

For the purposes of this analysis, it is assumed the proposed Project would not handle substances that may be acutely hazardous. However, the handling of hazardous materials or emission of hazardous substances, if present, would be in accordance with the 2015 Redlands Hazard Mitigation Plan.

The proposed Project site has been historically occupied by two single-family residential units and a citrus orchard since at least 1930. As part of the *Phase I ESA* prepared for the proposed Project, soil sampling was conducted to determine the levels of hazardous materials within the soil associated with the active orchard. The soil sampling indicated low levels of pesticides and heavy metals within the on-site soils; however, the amount were below residential screening levels. Based on these levels, construction activities associated with the proposed Project (i.e., grading, soil removal, etc.) would not release hazardous materials above threshold levels into the environment. As concluded by the *Phase I ESA* the historical usage of the property as citrus orchard is not considered an REC in connection with the Project site. One pole mount transformer is located at the center of the Project site; however, no signs of leaking or staining were observed in the area of the transformer. Three empty 55-gallon drums were located at the rear side of the barn on the Project site. There were no spills or staining in the vicinity of the drums and they are not considered RECs in connection the proposed Project site. The Project site did not show up on a list of hazardous materials sites pursuant to regulatory agencies databases that were researched. Finally, some of the existing buildings on site may contain ACM, and LBP; however, the existing buildings that are thought to contain these materials would be retained onsite as part of the proposed Project.

Compliance with 2015 Redlands Hazard Mitigation Plan would ensure that impacts associated with environmental and health hazards related to an accidental release of hazardous materials or emissions of hazardous substance near existing or proposed schools are **less than significant**. No mitigation is required.

d. 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

Discussion of Effects: Pursuant to Government Code Section 65962.5, two UST listings were identified near the Project site, as described in response to Checklist Question 3.8b. However, the Project site is not located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. Therefore, **no impact** related to hazardous materials sites pursuant to Government Code Section 65962.5 would occur. No mitigation is required.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?

No Impact

Discussion of Effects: The proposed Project is located approximately 3.11 miles southeast of the Redlands Municipal Airport. The Project site is located outside the Airport Influence Area and Airport Compatibility

Zones of the Redlands Municipal Airport.[35] **No impacts** related to the Project's vicinity to a public airport would occur. No mitigation is required.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact

Discussion of Effects: The proposed Project would design, construct, and maintain structures, roadways, and facilities in accordance with applicable standards associated with vehicular access, resulting in the provision of adequate vehicular access that would provide for adequate emergency access and evacuation. Construction activities that may temporarily restrict vehicular traffic would implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. The proposed Project would include an entrance off West Palm Avenue to access the new onsite residential development and a secondary access off Alvarado Street. The existing residential units on the Project site would continue to be accessed via driveways off West Palm Avenue and Alvarado Street. The proposed Project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of building permits. Adherence to the emergency access measures required by the City would ensure a **less than significant** impact related to implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan. No mitigation is required.

g. Expose people or structures to a significant risk of loss, injury or death involving wildland fires.

Less than Significant Impact

Discussion of Effects: The Project site is within a LRA Non-Very High Fire Hazard Severity Zone according to CALFIRE mapping.[36] The General Plan EIR, Figure 3.7-3, indicates that the Project site is located in an area designated as a Moderate Fire Level Threat.[37] Areas of High, Very High and Extreme Fire Threat Level lands are located approximately 1.2 miles south and southwest of the Project site. Similar to adjacent properties, the site is relatively flat. Areas surrounding the Project site consist primarily of residential uses. Because of the developed/urbanized nature of the Project vicinity, on-site and adjacent areas have minimal capability to support a wildfire. There would be a **less then significant impact** and no mitigation is required.

[35] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Figure 3.7-2 (Airport Hazards). City of Redlands. July 21, 2017.

[36] CALFIRE, Fire Hazard Severity Zones Maps, City of Redlands Map. Website: https://osfm.fire.ca.gov/media/5949/redlands.pdf. Accessed May 12, 2020.

[37] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.7: Hazards and Hazardous Materials, Figure 3.7-3: Fire Hazards and Fire Safety Services.

3.10 HYDROLOGY AND WATER QUALITY

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere with groundwater recharge such that the Project may impede substantial groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:	☐	☐	☒	☐
i. Result in substantial erosion or siltation on or off site?	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?	☐	☐	☐	☒
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?	☐	☐	☐	☒
iv. Impede or redirect flood flows?	☐	☐	☐	☒
d. Result in flood hazard, tsunami, or seiche zones, or risk release of pollutants due to Project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

The information in this section is based on the *Hydrology and Hydraulics Preliminary Report* (November 2019) and the *Water Quality Management Plan* (January 2020) (**Appendix H**).

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than Significant Impact

Discussion of Effects: The City is a co-permittee under Santa Ana Regional Water Quality Control Board (RWQCB) Order number R8-2010-0036, NPDES Permit No. CAS618036, also known as the Municipal Separate Storm Sewer System or MS4 permit. The San Bernardino County Water Quality Management Plan (WQMP) was developed to implement compliance with the MS4 permit. The Project site-clearing and grading phases would disturb vegetation and surface soils, potentially resulting in erosion and sedimentation. If left exposed and with no vegetative cover, the Project site's bare soil could be subject to additional wind and water erosion. Since the proposed Project involves over one acre of ground disturbance, it is subject to NPDES requirements and must implement a Storm Water Pollution Prevention Plan (SWPPP). Implementation of site-specific BMPs, as established by the SWPPP, would ensure all water quality impacts related to erosion and sedimentation from ground disturbance would be **less than significant**.

Under existing conditions, the Project site is 94.1 percent pervious, and storm water drains westerly across the existing onsite citrus orchard and outlets predominately as sheet flow into Palm Avenue and Alvarado Street. The Project site accepts run-off from the adjacent residential subdivisions primarily through South Eureka Street which appears to be originally designed to extend to Palm Avenue. The proposed Project would include development of a by-pass storm drain system proposed to carry run-off from South Eureka Street through the tract to an outlet at Alvarado Street. Low Impact Development (LID) Design Capture Volume (DCV) and Hydrologic Conditions of Concern (HCOC) requirements would be managed through the use of hydrologic source control measures, biofiltration swales located within the Project's private street's parkway area, and a bioretention system located within Lot B.

All runoff is conveyed to Morrey Arroyo Canal, which discharges into Zanja Mission Channel and into Santa Ana River Reach 5. From there, flow will continue downstream through Santa Ana Reach 4, to Santa Ana Reach 3, and into the Prado Basin Management Zone, and ultimately into the Pacific Ocean. Both Reach 4 and Reach 3 of the Santa Ana River list pathogens and pathogens/metals, respectively (Bacterial Indicators) as EPA-approved 303(D) listed impairments to water quality and are the pollutants of concern of the proposed Project.

To address potential water contaminants, the proposed Project is required to comply with applicable federal, State, and local water quality regulations. Development of the proposed Project would include four drainage management areas (DA-1 DMA A, DA-2 DMA A, DA-2 DMA B and DA-3 DMA A) to manage storm water runoff and direct it into the proposed infiltration system. DA-1 DMA A would manage runoff from 131,294 square feet of the Project site and would require a design capture volume of 6,014 cubic feet; DA-2 DMA A would manage runoff from 82,597 square feet of the Project site and would require a design capture volume of 3,881 cubic feet; DA-2 DMA B would drain approximately 56,254 square feet of the Project site and would require a design capture volume of 2,704 cubic feet; and, finally, DA-3 DMA A would manage runoff from 37,389 square feet of the Project site and would require a design capture volume of 546 cubic feet. Imperviousness of each DMA after applying preventative site design practices would be as follows: DA-1 DMA A at 58.8 percent imperviousness; DA-2 DMA A at 60.16 percent

imperviousness; DA-2 DMA B at 61.38 percent imperviousness; and, DA-3 DMA A at 12.69 percent imperviousness[38].

Proper engineering design and construction in conformance with the requirements of the City, the San Bernardino County Municipal Storm Water Management Program, the intent of the NPDES Permit for San Bernardino County and the incorporated cities of San Bernardino County within the Santa Ana Region (MS4 permit), and Project-specific recommendations outlined in the WQMP (**Standard Condition HYD-1**) would ensure that impacts related to water quality standards or waste discharge requirements would be **less than significant.** No mitigation is required.

Standard Condition: No mitigation is required; however, the following Standard Condition is a regulatory requirement that would be implemented to ensure impacts related to water quality standards or waste discharge requirements remain less than significant.

Standard Condition HYD-1: **Compliance with Project-specific Water Quality Management Plan (WQMP) Recommendations.** Prior to the approval of grading and/or building permits, the applicant shall provide evidence to the City for review and approval that Project structures, features, and facilities have been designed and will be constructed in accordance with the recommendations cited in the approved Project-specific WQMP. WQMP recommendations include an infiltration system includes vegetated swales and a bioretention system.

A portion of roof runoff shall be directed through roof downspouts to a vegetated drainage swale located on the west site of the building. Runoff from paved areas shall sheet flow to the infiltration basin. The infiltration basin shall be staked during construction to avoid unnecessary compaction.

Periodic maintenance of the bioretention system, landscaped areas, and vegetated swales 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 Director of the City of Redlands Municipal Utilities & Engineering Department and Development Services Department, as appropriate.

Adherence to the measures identified in the Project-specific WQMP and other requirements identified and required by the City would ensure that the proposed vegetated swales and bioretention system would be designed to capture 16,039 cubic feet of storm water runoff, which would exceed the required design capture volume (DCV) of DA-1 DMA A, DA-2 DMA A, DA-2 DMA B, and DA-3 DMA A (a total of 15,434 cubic feet) by 103.9 percent, and would satisfy the estimated volume needed post-development for the proposed Project.

The WQMP would be reviewed and approved as a routine action during the processing of the Project by the City; therefore, it is reasonable that the required measures and features detailed in the WQMP to

[38] The retention of the orange grove on Parcel 3/Lot E will increase the permeable area within the Project Site. The WQMP prepared for the site represents maximum runoff. With the retention of the grove on in this area, the required drainage capacity would be incrementally reduced (due to there being less impermeable area). It is reasonable to conclude the WQMP system as designed and as addressed in the IS/MND will continue to accommodate flows from the revised Project.

safeguard water quality would be incorporated into the proposed Project. Given compliance with all applicable federal, State, and local laws regulating surface water quality, as well as implementation of **Standard Condition HYD-1**, the proposed Project as designed is anticipated to result in a **less than significant** impact to any water quality standards or waste discharge. No mitigation is required.

b. Substantially deplete groundwater supplies or interfere with groundwater recharge such that may impede substantial groundwater management of the basin?

Less than Significant Impact

Discussion of Effects: The Project site is located in the Upper Santa Ana Valley Groundwater Basin. Recharge within the Upper Santa Ana Valley Basin occurs through infiltration of flow from unlined stream channels, and underflow from saturated alluvium and fractures in surrounding mountain bedrock and hills. As identified in the City's General Plan EIR, development within the City would not substantially deplete or interfere with groundwater recharge with implementation of water conservation policies designed to reduce demand on water and maximize pervious surfaces to foster infiltration.[39]

The proposed Project would consist of the retention of the existing two single-family residential units on site, development of a residential neighborhood consisting of 28 single-family residential units, and open space. The existing grove located on Parcel 3/Lot E will be retained. Implementation of the proposed Project would convert approximately 166,164.6 square feet (43 percent) of the Project site into impervious surfaces, but it would direct flows through four DMAs (DA-1 DMA A; DA-2 DMA A; DA-2 DMA B; and, DA-3 DMA A) into vegetated swales and a bioretention system. The proposed vegetated swales and bioretention system would be designed to capture 16,039 cubic feet of storm water runoff, which would exceed the required design capture volume (DCV) of DA-1 DMA A, DA-2 DMA A, DA-2 DMA B, and DA-3 DMA A (a total of 15,434 cubic feet) by 103.9 percent, and would satisfy the estimated volume needed post-development for the proposed Project. Therefore, the amount of water percolated on site post-development would be reduced compared to existing conditions. Additional Project design features designed to maximize groundwater infiltration, such as roof downspouts draining into pervious, landscaped areas and maintenance of existing surface flows across the Project site into the vegetated swales and bioretention system, would further facilitate groundwater recharge.

Water service is provided to the City and the Project site by the City's Municipal Utilities Department. The Department is party to the Upper Santa Ana River Watershed Integrated Regional Water Management Plan, which indicates the Integrated Regional Water Management Region is highly dependent on local water supplies. In particular, precipitation stored as groundwater provides approximately 67 percent of supplies during average years and over 70 percent of supplies during drought years.[40] According to the plan, the City has sufficient supplies to meet current and future development consistent with its General Plan through the year 2035.[41] Since the proposed Project is consistent with the City's General Plan, wherein future water supplies are considered adequate, the proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge activities. Impacts associated with this issue are **less than significant** and no mitigation is required.

[39] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Page 3.9-30. City of Redlands. July 21, 2017.

[40] *Upper Santa Ana River Watershed Integrated Regional Water Management Plan.* Page ES-2. City of Redlands Municipal Utilities and Engineering Department, et al. January 2015.

[41] *Ibid.* Pages 3-15 through 3-17.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:

i Result in substantial erosion or siltation on or off site?

Less than Significant Impact

Discussion of Effect: Development of the proposed Project (residential units and pavement) would alter the amount of existing impervious surface area and the amount of generated runoff. Under existing conditions, the Project site is 8.81 acres in size (383,736 square feet), 0.52 acres of which are (22,572 square feet) impervious, of which 8.29 acres is currently pervious (361,164 square feet). As such, 5.9 percent of the Project site is impervious and 94.1 percent of the site is pervious. Project site storm water drains westerly across the existing on-site citrus orchard and outlets predominately as sheet flow into Palm Avenue and Alvarado Street. The Project site accepts run-on from the adjacent residential subdivisions primarily through South Eureka Street which appears to be originally designed to extend to Palm Avenue. The proposed Project would include development of a bypass storm drain system proposed to carry run-off from South Eureka Street through the tract to an outlet at Alvarado Street.

Implementation of the proposed Project would convert approximately 166,164.6 square feet (43 percent) of the Project site into impervious surfaces,[42] but it would direct flows through four DMAs (DA-1 DMA A; DA-2 DMA A; DA-2 DMA B; and, DA-3 DMA A) into vegetated swales and a bioretention system. From here, the captured storm water runoff would discharge into onsite outlets that connects to the existing City storm drain system in West Palm Avenue and Alvarado Street in accordance with **Standard Condition HYD-1**.

The proposed DMAs were analyzed to determine if their conveyance of storm water runoff would create a Hydrologic Condition of Concern (HCOC). A HCOC occurs when post-development runoff conditions exceed pre-development runoff conditions, and discharge from the Project site has a flow rate greater than 110 percent of the pre-development two-year peak flow. Generally, projects are exempt from HCOC analysis if (1) they disturb less than one acre; (2) the volume and time of concentration of storm water runoff under post-development conditions are within five percent of pre-development conditions for a two-year return frequency 24-hour storm; or (3) all downstream conveyance channels to an adequate sump (e.g., Santa Ana River or Prado Dam) engineered and regularly maintained to ensure design flow capacity, no sensitive stream habitat areas would be adversely affected, or they are not identified on the Co-Permittees Hydromodification Sensitivity Maps. The proposed Project is greater than one acre, would entail volume and time of concentration of storm water runoff under post-development conditions in excess of five percent of pre-development conditions for a two-year return frequency 24-hour storm, and is located within the Co-Permittees Hydromodification Sensitivity Map as having the potential to contribute to an HCOC in a downstream channel.[43] Therefore, the proposed Project is required to conduct an analysis of HCOC. **Table Q: Hydrologic Conditions of Concern Summary** summarizes the Project-specific HCOC of DA-1 DMA A, DA-2 DMA A, DA-2 DMA B, and, DA-3 DMA A.

[42] The retention of the existing grove on Lots A and B, and Parcel 3/Lot E as open space (combined totaling 55,643 square feet) will increase the pervious surface area. Because the WQMP anticipated runoff associated with a large amount of impervious surface, it is reasonable to conclude the current design of the WQMP can sufficiently accommodate runoff resulting from the revised Project.

[43] *Stormwater Facility Mapping Tool.* San Bernardino County Watershed Action Plan. http://permitrack.sbcounty.gov/wap/ (accessed July 6, 2018).

As detailed in **Table Q**, the proposed DMAs under post-development conditions would increase storm water runoff over pre-development conditions 123 percent as a result of conversion of 143,592.6 square feet of pervious surface area into impervious surface area within the Project site. The resulting decrease in time of concentration and increase in storm water runoff would be managed by the proposed infiltration system appropriately sized to accommodate a 100-year/24-hour storm event. According to the Project-specific WQMP, the storm water runoff volume reduction needed to meet HCOC requirements equals 17,818 cubic feet.

Table Q: Hydrologic Conditions of Concern Summary (2-Year, 24-Hour Storm Summary)

Condition	Drainage Management Area (DMA)	Square Feet (Project Site Total)	Square Feet (Pervious Surface Area)	Runoff Volume (ft^3)	Time of Concentration (Minutes)	Peak Runoff (cfs)
Pre-Development	DA-1 DMA A	383,736	361,164	11,592	18.75	1.22
	DA-2 DMA A			7,456	12.0	1.24
	DA-2 DMA B			5,210	13.0	0.79
	DA-3 DMA A			10,082	10.75	2.31
Post-Development	DA-1 DMA A	383,736	217,571.4	4,861	11.0	2.72
	DA-2 DMA A			3,127	10.25	1.77
	DA-2 DMA B			2,185	12.25	1.09
	DA-3 DMA A			7,827	10.75	2.37
Difference (Pre-Development to Post-Development)	DA-1 DMA A	0	143,592.6	-6,731	7.75	1.50
	DA-2 DMA A			-4,329	1.75	0.53
	DA-2 DMA B			-3,025	0.75	0.30
	DA-3 DMA A			-2,225	0	0.06
Difference (as % of Pre-Development)	DA-1 DMA A	0%	-55.3%	**-58.1%**	**41.3%**	**123.0%**
	DA-2 DMA A			**-58.1%**	**14.6%**	**42.7%**
	DA-2 DMA B			**-58.1%**	**5.8%**	**38.0%**
	DA-3 DMA A			**-22.4%**	**0%**	**2.6%**
Volume Reduction Needed to Meet HCOC Requirement[1]	DA-1			**15,434 cubic feet**		
	DA-2					
	DA-3					

Source: Forms 4.2-2 and 4.2-3, *Preliminary Water Quality Management Plan for 301 West Palm Avenue*.
Notes: [1] Adding Volume Reduction of DA-1, DA-3, and DA-3 (6,974+7,561+2,646 = 17,181 cubic foot reduction).
DMA = Drainage Management Area
ft^3 = Cubic Feet
cfs = Cubic Feet per Second

The proposed infiltration basin would be designed to capture 16,039 cubic feet of storm water runoff, in accordance with **Standard Condition HYD-1**, which would exceed the estimated volume reduction needed to meet HCOC requirements. The retention of the existing grove on Parcel 3/Lot E and enlarged Lots A and B as open space (combined totaling 56,600 square feet) will increase the pervious surface area. Because the WQMP anticipated runoff associated with a large amount of impervious surface, it is reasonable to conclude the current design of the WQMP can sufficiently accommodate runoff resulting from the revised Project. With implementation of **Standard Condition HYD-**1, the proposed Project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation. Impacts would be **less than significant** and no mitigation is required.

ii Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

No Impact

Discussion of Effect: No streams, rivers, or other drainage features are located on site. Pursuant to the requirements of the NPDES permit, as discussed previously, excess flows and sediment would be captured by BMPs identified in the SWPPP and WQMP. Since the proposed Project not increase storm water flows, no significant flooding impact would occur. **No impact** would occur and no mitigation is warranted.

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?

No Impact

Discussion of Effect: The Project is located in an urbanized area for which storm drain features have been previously planned and installed. The nature of the proposed development would not generate flows previously unaccounted for in drainage plans. The Project would incorporate BMPs, and onsite drainage and conveyance improvements that would moderate flows into existing storm drain systems within West Palm Avenue and Alvarado Street. As the Project would maintain drainage patterns and flow rates comparable to the existing condition, **no impact** would occur. No mitigation is warranted.

iv Impede or redirect flood flows?

No Impact

Discussion of Effect: The Project area is not within a 100-year flood zone.[44] The proposed uses would not impede or direct flood flows within a 100-year flood zone; therefore, **no impact** would occur and no mitigation is required.

d. Result in flood hazard, tsunami, or seiche zones, or risk release of pollutants due to Project inundation?

No Impact.

Discussion of Effect: The Project site is not within a 100-year flood zone; as such, inundation of the uses at the Project site due to a flood hazard would not occur. The Project site is approximately 53 miles from the Pacific Ocean and the Santa Ana Mountains are between the Project site and the Pacific Ocean. As such, inundation from a tsunami would not occur at the Project site. Seiches are oscillations in enclosed bodies of water that are caused by a number of factors, most often wind or seismic activity. The nearest major water feature is the Seven Oaks Dam located approximately 6.95 miles northeast of the Project site. Therefore, seiche-related flooding is not anticipated to occur on the Project site. In the absence of the potential for inundation, there is little risk for the release of pollutants via inundation of the Project site. **No impact** associated with this issue would occur and no mitigation is required.

[44] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Figure 3.9-2. City of Redlands. July 21, 2017.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact

Discussion of Effect: The Federal Clean Water Act delegates authority to the States to issue NPDES permits for discharges of storm water from construction, industrial, and municipal entities to Waters of the United States. The purpose of the MS4 permit meets the SWRCB's requirements to mitigate for the negative impact of increases in storm water runoff caused by new development and redevelopment. The Project storm water discharge rates cannot exceed the pre-development runoff condition for 2-year 24-hour storm total or the 85th percentile 24-hour storm runoff event to be in compliance with the MS4 post-construction and site design requirements.

As detailed in response to Checklist Question 3.9a, the proposed Project would include an infiltration system composed of a bioretention system and vegetative swales that would help prevent increases in the rate or volume of storm water runoff leaving the Project site. The Project is over one acre in size and is required to have coverage under the State's General Permit for Construction Activities (SWPPP). As stated in the permit, during and after construction, BMPs would be implemented to reduce/eliminate adverse water quality impacts resulting from development. All impacts related to runoff during site preparation and grading would be addressed by the SWPPP.

All runoff from the built Project site would drain into the on-site bioretention system and vegetative swales prior to discharging to the existing city storm drain in the northwest corner of the Project site. As detailed in response to Checklist Question 3.9a, the proposed on-site infiltration basin would be designed to capture 16,039 cubic feet of storm water runoff, which would exceed the required DCV of DMAs 1, 2, and 3 by 103.9 percent to satisfy the estimated detention volume needed post-development for the proposed Project per the hydrology calculations detailed in the Project-specific WQMP.

The Project is located in an urbanized area for which storm drain features have been previously planned and installed. Any sources of storm water pollution would be addressed through adherence to NPDES permit requirements, and implementation of **Standard Condition HYD-1** would ensure post-development storm water runoff would not exceed pre-development conditions. Therefore, the proposed Project would not 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. Impacts would be **less than significant** and no mitigation is required.

3.11 LAND USE AND PLANNING

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	☐	☒
b.	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?	☐	☐	☒	☐

a. Physically divide an established community?

No Impact

Discussion of Effects: The Project site is located in an established neighborhood within the City of Redlands. Residential uses border the Project site on the east and south. West Palm Avenue borders the Project site on the north and beyond West Palm Avenue additional residential uses exist. Kingsbury Elementary School is located approximately 113 feet northwest of the Project site, northeast of Palm Avenue. The proposed Project would consist of a 28-unit residential development, retention of the existing two residential units, a barn, and their associated buildings on the site, and approximately 1.5 acres of citrus grove. The existing 0.82-acre orange grove (Parcel 3/Lot E) on the southwest corner of the Project site would be retained. Lots A through D would be replanted with citrus trees that would be privately owned by the HOA and available for use by on-site residents. The proposed Project uses are commensurate with the surrounding land uses, which are residential, so the proposed Project would integrate uniformly with the established residential uses surrounding the Project site.

The proposed Project would be served by existing public streets (West Palm Avenue and Alvarado Street) and other infrastructure. The proposed Project would subdivide the existing parcel into four new parcels, with the parcel slated for development (Parcel 4) divided into 28 individual residential lots and 4 open space lots. A fifth open space lot is provide on Parcel 3. Such subdivision is similar to the existing conditions in the neighborhood where the Project site is located. Based on the historic pattern of development in the Project vicinity and land uses proposed in accordance with the low density residential land use designation and R-S Suburban Residential District Single-Family Residential zoning designation, the proposed Project would not physically divide an established community. **No impact** would occur and no mitigation is required.

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact

Discussion of Effects: The General Plan land use designation for the Project site is *Low Density Residential* and the zoning designation is *R-S Suburban Residential District Single-Family Residential.* The R-S Suburban Residential District permits single-family residential units to be developed; however, a Planned Residential Development (PRD) would require a conditional use permit (CUP) to be approved for the site. The Project applicant intends to apply for the PRD CUP in order to develop on the proposed Project site. The Project

will not require a General Plan Land Use Amendment or Zone Change. The PRD would allow the Project applicant to develop the site with smaller lots and varied side yards than considered under the existing zoning designation. However, these would only be available if 20 percent of the Project site is dedicated as common space on the Project site. To meet this requirement, the Project applicant intends to maintain 1.38 acres of the PRD area (within Parcels 3 and 4) of the Project site as common open space, which includes a 0.86-acre open space on site at the corner of Palm Avenue and Alvarado Street (Parcel 3/Lot E) as well as Lots A through D of TTM 20305. The amount of common open space would equate to 20.2 percent of the 6.82-acre PRD portions of the Project site.[45]

The Project applicant will apply for two variances pertaining to front yard setbacks and to reduce the amount of required rear yard open space. These variances, if approved, would ensure that the proposed Project would not conflict with zoning standards on the Project site.

The proposed Project uses are consistent with uses permitted under the General Plan land use and zoning designation for the Project site and, as detailed throughout this Initial Study, all impacts to the environment resulting from the proposed Project are subject to applicable mitigation and local, State and/or federal regulations, which would reduce those impacts to **less than significant** levels. Therefore, impacts related to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the General Plan, Specific Plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect are **less than significant**. No mitigation is required.

[45] The net development area totals 6.82 acres (8.81 acres minus Parcel 1 [1.54 acres] and Parcel 2 [0.45 acre]). The applicant must provide 20 percent of the development area, or 1.36 acres, as open space. This requirement is achieved through the permanent maintenance of Lots AD and Parcel 3/Lot E as open space, which collectively total 1.38 acres (or 20.2 percent of the site's net development area).

3.12 MINERAL RESOURCES

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. 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?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a. 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?

No Impact.

Discussion of Effect: The Project site is not located in a mineral resource zone according to the *Redlands General Plan EIR*.[46] The Project site is currently occupied by two single-family residential units, a barn, associated outbuildings, and a citrus grove containing 700 orange trees. The site has been disturbed and any construction activities (i.e., grading, soil excavation, etc.) would not be at a depth where unknown mineral resources may be inadvertently discovered. Therefore, development of the proposed Project would not result in the loss of available mineral resources. **No impact** related to mineral resources would occur. No mitigation is required.

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact

Discussion of Effect: Please refer to the response to Checklist Question 3.11a. **No impact** related to mineral resources would occur. No mitigation is required.

[46] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Final, SCH #2016081041.* Figure 3.11-1 (Mineral Resources). City of Redlands. July 21, 2017.

3.13 NOISE

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b. Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

This section is based on noise modeling and analysis prepared by ECORP Consulting, Inc. in the *Palm Avenue Residential Noise Impact Assessment Report* (**Appendix H**).[47] The discussion and analysis provided here describes the potential short-term construction noise and vibration impacts associated with the proposed Project, as well as long-term operational noise impacts.

Background Information

The City of Redlands has adopted guidelines in a modified form as a basis for planning decisions based on noise considerations. These guidelines are shown below in **Table R: Land Use Compatibility for Noise Environments.** In the case that the noise levels identified at a proposed Project site fall within levels considered normally acceptable, the Project is considered compatible with the existing noise environment.

Table S: Interior and Exterior Noise Standards shows the City of Redlands interior and exterior noise standards for various land uses in the City.

[47] ECORP Consulting, Inc. *Palm Avenue Residential Project Noise Impact Assessment,* May 2020.

Table R: Land Use and Compatibility for Noise Environments

Land Use Categories		Community Noise Exposure (CNEL)			
Categories	**Uses**	**Clearly Compatible (A)**	**Normally Compatible (B)**	**Normally Incompatible (C)**	**Clearly Incompatible (D)**
Residential	Single Family, Duplex Multiple Family	< - 60	N/A	61 - 75	76 ->
Residential	Mobile Homes	< - 60	N/A	61 - 75	76 ->
Commercial (Regional District)	Hotel, Motel, Transient Lodging	< - 65	66 - 75	76 - 85	86 - >
Commercial (Regional, Village District, Special)	Commercial Retail, Bank, Restaurant, Movie Theater	< - 75	76 - 85	86 - >	N/A
Commercial (Industrial Institutional)	Office Building, Research & Dev., Professional Offices, City Office Building	< - 70	71 - 80	81 - 85	86 - >
Commercial (Recreation) Institutional (Civic Center)	Amphitheater, Concert Hall, Auditorium, Meeting Hall	N/A	< - 65	66 - 75	76 - >
Commercial (Recreation)	Children's Amusement Park, Minatare Golf Course, Go-cart Track, Equestrian Center, Sports Club	< - 75	76 ->	N/A	N/A
Commercial (General, Special) Industrial, Institutional	Automobile Service Station, Auto Dealership, Manufacturing Warehouse, Wholesale, Utilities	< - 75	76- >	N/A	N/A
Institutional (General)	Hospital, Church, Library, Schools Classroom	< - 65	66 - 70	71- 80	81 - >
Open Space	Parks	< - 70	71 - 75	76 - 80	81 - >
Open Space	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	< - 75	76 - 80	81 - >	N/A
Agriculture	Agriculture	N/A	N/A	N/A	N/A

Source: ECORP Consulting Inc., *Palm Avenue Residential Project Noise Impact Assessment*, Table 4, May 2020.
Notes: NA = Not Applicable. Normally Acceptable = Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Conditionally Acceptable = New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice. Outdoor environment will seem noisy. Normally Unacceptable = New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded. Clearly Unacceptable = New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

Table S: Interior and Exterior Noise Standards

Land Use Categories	Interior[1] CNEL	Exterior[2] CNEL
Residential		
Single Family, Duplex, Multiple Family	45[3]	60
Mobile Home	---	60[4]
Commercial, Industrial, Institutional		
Hotel, Motel, Transit Lodging	45	65[3]
Commercial Retail, Bank, Restaurant	50	---
Office Building, Research & Development, Professional Offices, City Office Building	50	---
Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	---
Gymnasium (Multipurpose)	50	---
Sports Club	55	---
Manufacturing, Warehousing, Wholesale, Utilities	60	---
Movie Theaters	45	---
Institutional		
Hospitals, Schools classrooms	45	60
Open Space		
Parks	---	60

Source: ECORP Consulting Inc., *Palm Avenue Residential Project Noise Impact Assessment*, Table 4, May 2020
Notes: [1] Indoor environment excludes bathrooms, toilets, closest, corridors. [2] Outdoor environment limited to private yard of single family as measured at property line; multifamily private patio or balcony that is served by means of exist from inside; mobile home park; hospital patio; park picnic area; school playground; hotel and recreational area. [3]Noise level requirement with open window, if they are used to meet natural ventilation requirements. [4] Exterior noise levels should be such that interior noise levels will not exceed 45 CNEL. [5] Expect those areas affected by aircraft noise.

Municipal Code Noise Ordinance. Chapter 8.06.070 of the City Municipal Code outlines the exterior noise standards for stationary noise sources is shown below in **Table T: Maximum Permissible Exterior Sound Levels by Receiving Land Use**.

Table T: Maximum Permissible Exterior Sound Levels by Receiving Land Use

Receiving Land Use Category	Time Period (L_{eq})	Noise Level (dBA)
Single-family residential districts	10:00 p.m. to 7:00 a.m.	50
	7:00 a.m. to 10:00 p.m.	60
Multifamily residential districts; public space; institutional	10:00 p.m. to 7:00 a.m.	50
	7:00 a.m. to 10:00 p.m.	60
Commercial	10:00 p.m. to 7:00 a.m.	60
	7:00 a.m. to 10:00 p.m.	65
Industrial	Any time	75

Source: *Chapter 8.06.070 (Exterior Noise Limits),* Redlands Municipal Code.
dBA = A-weighted decibels L_{eq} = Equivalent continuous sound level

As shown, the maximum permissible sound levels at the exterior of a single-family residential district, such as that proposed by the Project, is 60 dBA during the daytime and 50 dBA during the nighttime. **Table T** also addresses public spaces, such as the park proposed by the Project, where maximum permissible sound levels are the same as single-family residential districts.

Chapter 8.06.080 of the City Municipal Code outlines the interior noise standards for stationary noise sources is shown below in **Table U: Maximum Permissible Interior Sound Levels by Receiving Land Use.**

Table U: Maximum Permissible Interior Sound Levels by Receiving Land Use

Receiving Land Use Category	Time Period (L_{eq})	Noise Level (dBA)
Single-family residential districts	Any time	45
Multifamily residential districts; institutional; hotels	Any time	45
Commercial	Any time	50
Industrial	Any time	60

Source: *Chapter 8.06.080 (Interior Noise Standards),* Redlands Municipal Code.
dBA = A-weighted decibels L_{eq} = Equivalent continuous sound level

Additionally, Section 8.0.100 *Residential Air Conditioning or Handling Equipment*, states that it is unlawful to operate any air conditioning or air handling equipment that exceeds sound levels presented in **Table T.** Lastly, Section 8.06.120 states that the noise standards shall not apply to noise sources associated with new construction, remodeling, rehabilitation or grading of any private property, provided such activities take place between the hours of 7:00 am and 8:00 pm on weekdays, including Saturdays, with no activity taking place at any time on Sundays or federal holidays. All motorized equipment used in such activities shall be equipped with functioning mufflers.

Noise Sensitive Land Uses. Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest noise-sensitive land uses consist of the two single-family residential units that are currently on the Project site. The closest offsite noise sensitive receptors include residential units in all directions. The residential units to the east and south are located directly adjacent to the Project site.

Existing Ambient Noise Environment. The area surrounding the Project site is impacted by various noise sources typical urban communities such as: noise generated by traffic, and day-to-day outdoor activities. Mobile sources of noise, especially cars and trucks traversing Palm Avenue, are the most common source of noise in the immediate vicinity of the Project site. Other types of noise are typical of residential land uses, such as radios, dogs barking, lawnmowers and other equipment.

The Project site is currently occupied by two single-family residential units, a carriage house/barn, a shed and an active citrus orchard occupied by approximately 700 orange trees. The site is generally bound by West Palm Avenue to the north, with residences and Kingsbury Elementary School beyond. Alvarado Street to the west, with residences to the south and east, and Alvarado Street and single-family residential units to the south. In order to quantify existing ambient noise levels in the Project area, ECORP Consulting conducted three short-term noise measurements on August 22, 2019. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site during the middle of a weekday (see Attachment A in **Appendix H** for the field sheets that include location photographs of the short-term monitoring sites). The average noise levels and sources of noise measured at each location are listed in **Table V: Existing (Baseline) Noise Measurements**.

Table V: Existing (Baseline) Noise Measurements

Location	L_{eq} dBA	L_{min} dBA	L_{max} dBA	Time
Location 1: Along sidewalk/driveway on West Palm Avenue, north of residence.	60.2	39.1	77.0	11:10 am-11:20 am
Location 2: Cul-de-sac along Banyan Drive adjacent to residence.	49.5	39.7	59.6	11:30 am-11:40 am
Location 3: At the end of the cul-de-sac on Walnut Avenue	40.3	33.7	48.5	11:50 am-12:00 pm

Source: ECORP Consulting Inc., *Palm Avenue Residential Project Noise Impact Assessment*, Table 3, May 2020.
Notes: Measurements were taken by ECORP Consulting with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. Please see Attachment A in **Appendix H** for noise measurement outputs.

As shown in **Table V**, the ambient noise levels ranged from 40.3 dBA to 60.2 dBA L_{eq} near the Project site. The most common noise generators in the Project vicinity were automotive vehicles (cars, trucks, buses, motorcycles) traversing Palm Avenue. Traffic moving along streets produces a sound level that remains relatively constant and is part of the Project area's minimum ambient noise level. Vehicular noise varies with the volume, speed and type of traffic. Slower traffic produces less noise than fast moving traffic. Trucks typically generate more noise than cars. Infrequent or intermittent noise also is associated with vehicles, including sirens, vehicle alarms, slamming of doors, garbage and honking of horns. These noises add to urban noise and are regulated by a variety of agencies.

Technical Background – Fundamentals of Groundborne Vibration:

The following provides an overview of the characteristics of vibration and the regulatory framework that applies to vibration impacts to sensitive receptors in the vicinity of the Project site.

Vibration Sources and Characteristics. Sources of groundborne vibrations include natural phenomena (i.e., earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (i.e., explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (i.e., factory machinery) or transient (i.e., explosions, trains, heavy trucks on roadways, etc.).

Groundborne vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table W: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels shows the reactions of people and the effects on buildings produced by continuous vibration levels. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated complaints, even though there is very little risk of actual building structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Table W: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006-0.019	64-74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected.
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities.	Virtually no risk of architectural damage to normal buildings.
0.2	94	Vibrations may begin to annoy people in buildings.	Threshold at which there is a risk of architectural damage to normal dwellings.
0.4-0.6	98-104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Architectural damage and possibly minor structural damage.

Source: ECORP Consulting Inc., *Palm Avenue Residential Project Noise Impact Assessment*, Table 2, May 2020.

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in **Table W** is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth moving that requires the use of heavy-duty earth-moving equipment. For the purposes of the analysis below, the PPV descriptor with units of inches per second is used to evaluate construction-generated vibration for building damage and human annoyance.

a. Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant with Mitigation Incorporated

Short-Term (Construction) Noise

Short-term noise impacts would occur during construction of the proposed Project. Construction-related, short-term noise levels would be higher than existing ambient noise levels in the vicinity of the Project site, but would cease once Project construction is completed.

Two types of short-term noise impacts could occur during Project construction. First, construction crew commutes and the transport of construction equipment and materials to the Project site would incrementally increase noise levels on roads accessing the Project site. Although there would be a relatively high single-event noise exposure potential from trucks passing by, 84 dBA L_{max} at 50 feet, the effect on longer-term (hourly or daily) ambient noise levels would be small when compared to existing hourly and daily traffic volumes on adjacent roadways. Since construction-related vehicle trips would not approach hourly and daily traffic volumes described above, traffic noise would not increase by 3 dBA. A

noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would be **less than significant**.

The second type of short-term noise impact is related to noise generated during Project construction. Construction is conducted in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics that change the character of the noise generated on site. Therefore, the noise levels will vary as construction progresses. Despite the variety in the types and sizes 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 X: Typical Maximum Construction Equipment Noise Levels** lists the maximum noise levels for typical construction-equipment based on a distance of 50 feet and the maximum 8-hour noise level for typical construction-equipment at 50 feet between the equipment and a noise receptor.

Table X: Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Maximum Noise (L_{max}) at 50 feet (dBA)	Maximum 8-Hour Noise (L_{eq}) at 50 feet (dBA)
Crane	80.6	72.6
Dozer	81.7	77.7
Excavator	80.7	76.7
Generator	80.6	77.6
Grader	85.0	81.0
Paver	77.2	74.2
Roller	80.0	73.0
Tractor	84.0	80.0
Dump Truck	76.5	72.5
Concrete Pump Truck	81.4	74.4
Welder	74.0	70.0

Source: ECORP Consulting Inc., *Palm Avenue Residential Project Noise Impact Assessment*, Table 8, May 2020.
dBA = A-weighted decibel
L_{max} = maximum noise level

Typical maximum noise levels range up to 85 dBA L_{max} at 50 feet during the noisiest construction phases. Site preparation, which includes excavation and grading, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavators, bulldozers, backhoes and front loaders. Earthmoving and compacting equipment includes graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Construction activities associated with excavation and grading is expected to require on-site use of front-end loaders, bulldozers and graders. Noise associated with each piece of construction equipment is estimated to be between 80 and 85 dBA L_{max} at a distance of 50 feet from the active construction area during grading. The maximum noise level generated by each dozer is assumed to be approximately 85 dBA L_{max} at 50 feet from the dozer. Each front-end loader would generate approximately 80 dBA L_{max} at 50 feet from the front-end loader. The maximum noise level generated by each grader is approximately 85 dBA L_{max} at 50 feet from the grader. Each piece of construction equipment operates as an individual point source. For example, if two of the same pieces of construction equipment are operating at the same location and each generates a noise level of 85 dBA L_{max} at a distance of 50 feet, the resulting noise level

would be 3 dBA higher or 88 dBA L_{max} based on logarithmic addition. Therefore, the worst-case composite noise level for the proposed Project at a distance of 50 feet from the active construction area would be 89 dBA L_{max} (85 dBA +80 dBA + 85 dBA = 89 dBA). In general, doubling the distance would decrease noise levels by 6 dBA, while halving the distance would increase noise levels by 6 dBA.

Nearby noise-sensitive land uses consist of two single-family residential units located on the Project site, as well as single-family residences directly adjacent to the Project site. Due to the close proximity, these sensitive receptors would experience noise levels in excess of what is presented above in **Table X** over the course of Project construction.

Compliance with the City's Noise Ordinance would ensure that construction noise impacts are reduced to the greatest extent feasible. Although construction noise would be higher than the ambient noise in the Project vicinity, construction noise would cease to occur once the Project construction is completed. **Standard Condition NOI-1** would limit construction hours, unless permission is obtained to construct outside the allowed hours and require the implementation of noise-reducing measures during construction. Therefore, with the implementation of **Standard Condition NOI-1**, construction activity noise impacts would be **less than significant.**

During construction, the contractors would be required to comply with the Noise Ordinance from the City Municipal Code Chapter 8.06.090F (Noise Disturbances Prohibited) and Chapter 8.06.120 (Exemptions). The City provides exemptions for construction activity operation between 7:00 a.m. and 8:00 p.m. Monday through Saturday provided all motorized equipment is equipped with functioning mufflers. For activities that are allowed to occur outside the permitted hours, conformance with the standards in **Table W** is necessary. In order for the proposed Project to maintain compliance with the City's noise standards, **Standard Condition NOI-1** is proposed.

Standard Condition: No mitigation is required; however, the following Standard Condition is a regulatory requirement that would be implemented to ensure impacts related to construction noise remain less than significant.

Standard Condition NOI-1: **Compliance with City Municipal Code Chapter 8.06.090F (Noise Disturbances Prohibited) and Chapter 8.06.120 (Exemptions).** Construction activities, including operating or causing the operation of any tools or equipment used in site preparation, construction, drilling, repair, alteration, grading, paving, and/or architectural coating shall be restricted to the hours of 7:00 a.m. to 8:00 p.m. Mondays through Saturdays, and are prohibited at any time on Sundays and holidays unless permission is given by the City and noise levels remain below the City's exterior noise level standards for stationary sources.

All mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with exhaust and air intake silencers in proper working order and shall be maintained so that vehicles and their loads are secured from rattling and banging.

With implementation of **Standard Condition NOI-1**, construction noise impacts to nearby sensitive receptors would remain **less than significant.** No mitigation is required.

Long-Term (Operational) Noise – Project Land Use Compatibility

The City of Redlands General Plan Health Community Chapter provides the City with a tool to gauge the compatibility of new land uses (the proposed Project) relative to existing noise levels. Policy 9.0e of the Healthy Community Chapter states that projects are required to use the criteria specified in the General Plan (see **Table R**) to assess the compatibility of proposed new land uses with the projected noise environment and apply the noise standards in the General Plan, which prescribe interior and exterior noise standards in relation to specific land uses. The criteria to assess the compatibility of proposed new land uses with the projected noise environment, as shown in **Table R**, identifies clearly compatible, normally compatible, normally incompatible, and clearly incompatible noise levels for various land uses, including single-family residential uses such as those proposed by the Project. In the case that the noise levels identified at the Project site fall within levels considered normally compatible, the Project is considered compatible with the existing noise environment. As shown in **Table R** compatible noise level for locating residential uses is anything under 60 dBA CNEL. A clearly compatible noise level for locating park uses is anything under 75 dBA CNEL. Additionally, the Interior and Exterior Noise Standards contained in **Table S** limit exterior noise levels at single-family residences to 60 dBA CNEL and interior noise level within single-family residences to 45 dBA CNEL.

The predominant noise source in the Project vicinity is generated by traffic on Palm Avenue. According to the Table 3.12-4 of the City General Plan EIR the segment of Palm Avenue between Cajon Street and Center Street currently emits traffic noise at levels that attenuate to the acceptable exterior standard of 60 dBA CNEL at 148 feet from centerline (65 dBA CNEL is experienced at 69 feet from centerline). Additionally, the City of Redlands expects future (2035) traffic on Palm Avenue to generate noise that attenuates to 60 dBA CNEL at 167 feet from centerline as shown in Table 3.12-8 of the City General Plan EIR (65 dBA CNEL would be experienced at 78 feet from centerline).

The nearest two houses (Lots 1 and 28) have exterior living space (yards) that are planned to be approximately 149 and 140 feet, respectively, from Palm Avenue centerline. Therefore, portions of Lots 1 and 28 would potentially be exposed to noise levels in excess of the 60 dBA CNEL residential standard in the current and/or future year condition. According to the General Plan Healthy Community Chapter, these portions of Lots 1 and 28 would be considered Normally Incompatible for residential uses, if left unmitigated, and therefore require an analysis of the needed noise reducing features included in the design.

Noise path controls can be an effective method in controlling noise affecting an exterior environment. Barriers or enclosures can provide a substantial reduction in the nuisance effect in some cases. To be effective, a noise enclosure/barrier must physically fit in the available space, must break the line of sight between the noise source and the receptors, must be largely free of holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise receptor and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. Policy 9.0i of the General Plan supports the construction of noise barriers to mitigate sound emissions where necessary or when feasible and encourages the use of walls and berms to protect residential or other noise sensitive land uses that are adjacent to major roads, such as Palm Avenue.

Lots 1 and 28 are proposed for single-story residences flanked on their northern boundaries by 5-foot 4-inch high CMU masonry walls, which partially block the line of sight between the side yards of these

residences and Palm Avenue. Lot 1 is further encompassed by a 5-foot 4-inch CMU masonry wall along its eastern property line, which also blocks the line of sight with Palm Avenue. The western property line of Lot 28 would also be exposed to noise generated on Palm Avenue, and tubular steel fencing is proposed for this property line. Without a proper height of the CMU masonry walls, the residential units proposed for lots 1 and 28 would be exposed to noise levels that exceed City standards resulting in a potentially significant impact. **Mitigation Measure NOI-1**, as described below, would be implemented to reduce this potential impact.

Mitigation Measure NOI-1: The Project improvement and building plans shall include the following requirements for construction activities:

The proposed barriers spanning the north and eastern boundaries of Lot 1 and northern/western boundaries of Lot 28 shall be constructed to six feet in height in order to break "line of sight" between the lots and Palm Avenue. The barrier shall be constructed of CMU block, or material of similar density and use, with no visible gaps between construction materials or at the base of the wall.

As previously described, a solid wall generally reduces noise levels by 10 to 20 dBA. Since portions of Lots 1 and 28 would potentially be exposed to noise levels in excess of the 60 dBA CNEL standard, yet less than 65 dBA CNEL without a noise barrier, the 10 to 20 dBA reduction provided by implementation of the barrier described in **Mitigation Measure NOI-1** would reduce noise levels at these lots to below the 60 dBA CNEL standard. Therefore, with implementation of **Mitigation Measure NOI-1** impacts would be **less than significant with mitigation incorporated**.

Long-Term (Operational) Noise – On-site Noise Sources

Nearby noise-sensitive land uses consist of the two single-family residences located on the Project site, as well as single-family residences directly adjacent to the. The main operational noise source associated with the proposed Project would be that of operational stationary sources. Potential stationary noise sources related to long-term operation of a residential neighborhood on the Project site would include mechanical equipment such as air conditioning units and other typical sources specific to residential neighborhoods such as barking dogs, internal traffic circulation, radios, and people talking. According to field measurements conducted by ECORP, mechanical heating, ventilation, and air conditioning equipment generates noise levels less than 45 dBA at 20 feet, which is less than City of Redlands daytime and nighttime thresholds for residential uses pursuant to Section 8.60.070 of the City's Municipal Code. Additionally, per field measurements conducted by ECORP within a standard residential neighborhood, noise levels ranged from 49.5 to 49.7 dBA. The proposed Project places residential uses adjacent to other residential uses. The most basic planning strategy to minimize adverse impacts on new land uses due to noise is to avoid designating certain land uses at locations within the City that would negatively affect adjacent noise sensitive land uses. The Project site and adjacent surrounding land uses have a General Plan designation of Low Density Residential. The Low Density Residential General Plan designation is intended for single-family residential development of six dwelling units per gross acre.

The Project is consistent with the types, intensity, and patterns of land use envisioned for the Project area, and as previously described operation of the Project would not result in an increase in noise-related impacts associated with on-site sources. Impacts would be **less than significant** and no mitigation measures would be warranted.

Long-Term (Operational) Noise – Off-site Traffic Noise Sources

Project operation would also result in the addition of traffic on adjacent roadways, thereby increasing vehicular noise in the Project area. West Palm Avenue would provide the main access to the Project site. According to the 2017 Redlands Traffic Counts identified in the City's General Plan Transportation Chapter, Palm Avenue between Hibiscus Drive (0.35 miles from the Project site) and Redlands Boulevard has an average daily traffic (ADT) volume of approximately 4,409 cars per day. Per the *10th Edition of the Institute of Transportation Engineers' Trip Generation Manuel (2017)*, a single-family home generates approximately 9.44 trips per day. Thus, the Project is anticipated to result in 264 average daily trips. According to *Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013)*, doubling of traffic on a roadway would result in an increase of 3 dB (a barely perceptible increase). The Project would not result in a doubling of traffic, thus its contribution to existing traffic noise would not be perceptible. Impacts would be **less than significant** and no mitigation measures would be warranted.

Overall, the proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the Project area in excess of standards established by the City of Redlands through its General Plan and Municipal Code. Impacts would be **less than significant** and no mitigation measures would be warranted.

b. Result in generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact

Discussion of Effects: Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors where the motion may be discernible; without the effects associated with the shaking of a building, there is less adverse reaction. Typical sources of groundborne vibration are heavier construction activities (e.g., blasting and pile driving), steel-wheeled trains, and occasional traffic on rough roads. Construction for the proposed Project does not require the use of blasting or pile driving and would not result in substantial vibration.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction as such equipment is not generally necessary for single-family residential construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in **Table Y: Vibration Source Amplitudes for Construction Equipment**.

Table Y: Vibration Source Amplitudes for Construction Equipment

Equipment Type	Peak Particle Velocity at 25 Feet (inches per second)
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Rock Breaker	0.082
Jackhammer	0.035
Small Bulldozer/Tractor	0.003

Source: ECORP Consulting Inc., *Palm Avenue Residential Project Noise Impact Assessment*, Table 9, May 2020.

The City of Redlands does not regulate vibration associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans's (2004) recommended standard of 0.2 inch per second peak particle velocity with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings.

It is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest structure. The nearest structures of concern to the construction site are single-family residential units located approximately 30 feet away. Based on the vibration levels presented in **Table Y**, ground vibration generated by heavy-duty equipment would not be anticipated to exceed approximately 0.089 inches per second peak particle velocity at 25 feet. Thus, structures located at 30 feet would not be negatively affected by construction vibration.

The proposed Project, during operation, would not include the use of any stationary equipment that would generate excessive groundborne vibration levels. As such, nearby sensitive receptors would not be exposed to vibrations generated by operation of the proposed Project.

Overall the proposed Project would result in a **less than significant impact** pertaining to the generation of groundborne vibrations. No mitigation measures would be warranted.

c. For a project located within the vicinity of a private airstrip or airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels?

No Impact

Discussion of Effect: The proposed Project is located approximately 3.11 miles northeast of the Redlands Municipal Airport and is located outside of the airport's 70 dBA CNEL noise contour as depicted in the City of Redlands General Plan. The proposed Project would therefore not expose people residing or working in the Project area to airport generated excessive noise levels. **No impact** would occur and no mitigation measures are warranted.

3.14 POPULATION AND HOUSING

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact

Discussion of Effects: The Project site is currently occupied by two single-family residential units, a barn, accessory outbuildings, and a citrus grove containing 700 orange trees. Based on a 2.68 persons per household estimate for the City of Redlands obtained from the California Department of Finance, there is 6 people that currently occupy the site (rounded up to 6 from 5.36 people).[48] Once the Project is developed with the 28 single-family residential units, the total population of the site could be increased by up to 75 additional persons.

The projected increase in population would be consistent with planned population growth in the City, as anticipated by the General Plan and regional planning documents. Additionally, the proposed Project would not entail construction of additional public roadways or infrastructure such as wastewater treatment facilities so as to indirectly induce population growth. Since population generated by the proposed Project would not exceed local and regional population growth projections, population growth generated by the proposed Project would not be substantial. Impacts are **less than significant** and no mitigation is required.

b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact

Discussion of Effects: The proposed Project site is occupied by two single-family residential. The Project site would be subdivided into four parcels and the existing single-family residential homes on-site would be retained. As such, the proposed Project would not displace existing housing. The proposed Project would increase the housing inventory of the City of Redlands by 28 single-family residential units which would be consistent with the General Plan land use designation of the site and buildout of the City.

[48] California Department of Finance, City of Redlands, Table 2: E-5 City/County Population and Housing Estimate, 4/1/2020. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed May 8, 2020.

Therefore, the proposed Project would not displace housing. **No impact** would occur and no mitigation is required.

3.15 PUBLIC SERVICES

Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Less than Significant Impact

Discussion of Effects:

Fire Protection. Fire protection services within the City are provided by the Redlands Fire Department (RFD). Development of the proposed Project may incrementally increase the demand for fire protection services as it could increase the site's population by up 75 additional residents. In its review of new development plans, the RFD evaluates project plans on its ability to provide proper fire protection to the development. Additionally, the proposed Project would be required to pay service and development fees to the RFD. Such fees would be used to fund capital costs associated with acquiring land for new fire stations, constructing new fire stations, purchasing fire equipment, and providing for additional staff as needed and as identified by the City. Any construction of future fire protection facilities would require project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated.

The RFD aims to meet National Fire Protection Association standards of a four-minute response time for first responders 90 percent of the time, but as of 2015, RFD 90 percent response time was approximately nine minutes.[49] Therefore, the City is pursuing a more realistic objective of arriving within seven minutes 90 percent of the time, in accordance with the 2008 High-Level Fire Department Review for the RFD.

The RFD has determined that it would need to increase the number of fire stations in order to meet increased future citywide service demands; however, as of February 2017, there are no plans to do so. The Project site is located in an established residential neighborhood of the City, surrounded by urban development and in a Local Responsibility Area (LRA) Non-Very High Fire Hazard Severity Zone (Non-VHFHSZ).[50] The closest fire station to the Project site is Redlands Fire Station 261 located at 525 East Citrus Avenue, approximately 1.21 miles northeast of the Project site. Average travel time between the nearest fire station and the Project site is approximately four minutes. Through compliance with California Vehicle

[49] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Page 3.13-18. City of Redlands. July 21, 2017.

[50] CAL FIRE, Fire Hazard Severity Zones Maps, City of Redlands Map. Website: https://osfm.fire.ca.gov/media/5949/redlands.pdf. Accessed May 12, 2020.

Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, travel time between the Fire Station 261 and the Project site is expected to be less than three minutes. Additionally, the City maintains mutual aid agreements with surrounding cities (i.e., Yucaipa and Loma Linda), as well as with the County of San Bernardino and the United States Forest Service, which allow for the services of nearby fire departments to assist the City during major emergencies.

Project design features incorporated into the structural design and layout of the residential units would keep service demand increases to a minimum. For example, the Project would be constructed in accordance with the current California Building Code (at the time of the writing the 2019 CBC), which requires all on-site structures to incorporate construction techniques and materials such as roofs, eaves, exterior walls, vents, appendages, windows, and doors resistant to and/or to perform at high levels against ignition during the exposure to fires. Fire sprinklers would be incorporated into the each residential unit to further reduce fire risk and service demand. Access to the Project site would be from West Palm Avenue and a secondary access at Alvarado Street. The internal street on Project site would be developed to City and Fire Code Standards to allow emergency vehicles ease of access and maneuverability. Finally, fire hydrants would be placed within the Project site, at specific distances required by fire service and City requirements.

Based on the proposed Project's location in a LRA Non-Very High Fire Hazard Severity Zone in proximity to existing RFD facilities capable of responding to emergencies at the Project site within the City's stated response time objective of seven minutes 90 percent of the time; the development of the proposed Project would not cause fire staffing, facilities, or equipment to operate at a deficient level of service. The Project itself would not require the construction of new or physically altered fire protection facilities, the construction of which could result in an environmental impact. Additionally, because the proposed Project would be required to pay Development Impact Fees (DIFs) to fund future fire facilities and services, which would be subject to Project- and site-specific environmental review, impacts associated with the need to expand fire protection services and facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

Police Protection. Police protection services within the City are provided by the Redlands Police Department (RPD). Development of the proposed Project may incrementally increase the demand for police protection services due to the increased population of residents on the site. In its review of new development plans, the RPD evaluates project plans on its ability to provide proper police protection to the development. Additionally, the proponent of the proposed Project would be required to pay service and development fees to the RPD. Such fees would be used to fund capital costs associated with acquiring land for new police stations, constructing new police stations, purchasing crime-fighting equipment for new police stations, and providing for additional staff as needed and as identified by the City. Any construction of future police facilities would require Project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated.

The RPD does not base service standards on an industry standard; instead, the City aims for a response time of 4.5 minutes. The RPD has determined that it would need to increase the number of police stations in order to meet increased future citywide service demands. The Project site is located in an established residential neighborhood of the City, which is already served by the RPD. The closest police station to the Project site is Redlands Police Station located at 1270 W. Park Avenue, approximately 2.4 miles northwest of the Project site. Average travel time between the nearest police station and the Project site is approximately seven minutes. Through compliance with California Vehicle Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, travel time between the nearest police station and

the Project site is expected to be less than four minutes. Additionally, the City maintains mutual aid agreements with surrounding cities (i.e., Yucaipa and Loma Linda), as well as with the County of San Bernardino, which allow for the services of nearby police and sheriff departments to assist the City during major emergencies.

The Project would incorporate Crime Prevention through Environmental Design (CPTED) features to keep service demand increases to a minimum. For example, the Project informal surveillance design such as architecture, landscaping, and lighting designed to minimize visual obstacles and eliminate places of concealment for potential assailants; and a Homeowners Association that establishes guidelines that could prevent crime and set up a neighborhood watch program.

Based on the proposed Project's location in proximity to existing RPD facilities capable of responding to emergencies at the Project site within the City's stated response time objective of 4.5 minutes, development of the proposed Project would not cause law enforcement staffing, facilities, or equipment to operate at a deficient level of service. The Project itself would not require the construction of new or physically altered law enforcement protection facilities, the construction of which could result in an environmental impact. Additionally, because the proposed Project would be required to pay DIFs to fund future law enforcement facilities and services, which would be subject to Project- and site-specific environmental review, impacts associated with the need to expand law enforcement protection services and facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

Schools. The Project site is located within the Redlands Unified School District (RUSD). RUSD currently has 16 elementary schools (serving kindergarten through fifth grade); four middle schools (servings grades sixth through eighth); and three high schools (serving grades ninth through twelfth). The three closest schools to the Project site are as follows:

- Kingsbury Elementary School located at 600 Cajon Street approximately 113 feet northeast of the Project site;
- Cope Middle School located at 1000 West Cypress Avenue approximately 0.72 mile northwest of the Project site; and
- Redlands High School located at 840 East Citrus Avenue approximately 1.14 miles northeast of the Project site.

Based on the location of the above mentioned school's proximity to the Project site, students generated by the site's population increase are anticipated to attend these three schools. **Table Z: Redlands Unified School District Enrollment and Capacity Data** shows the current enrollment and capacity of the Redlands School District, Kingsbury Elementary School, Cope Middle School, and Redlands High school.

As of the 2019-2020 school year, the Redlands Unified School District has capacity for an additional 4,523 students; Kingsbury Elementary School has a capacity for an additional 97 students; Cope Middle School has a capacity for an additional 120 students; and, Redlands High School has a capacity for an additional 1,648 students.

Table Z: Redlands Unified School District Enrollment and Capacity Data

District/School	Enrollment Capacity	Optimum Enrollment	2019-2020 Enrollment	Excess Room
Redlands Unified School District	26,125	20,302	21,062	4,523
Kingsbury Elementary School	570	621	473	97
Cope Middle School	1,507	1,674	1,387	120
Redlands High School	3,950	3,538	2,302	1,648

Source: Enrollment Capacity and Optimum Enrollment were obtained from the City of Redlands, *Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan*, Chapter 3.13: Public Facilities and Services, Table 3.13-3: Redlands Unified School District Enrollment, pg. 3.13-10. 2019-2020 Enrollment Data obtained from the California Department of Education, Data Quest Website: https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdLevels.aspx?cds=3667843&agglevel=District&year=2019-20. Accessed May 12, 2020.

The proposed Project would include the development of 28 single-family residential units which would generate school-aged children that would be anticipated to attend Redlands Unified School District's Kingsbury Elementary School, Cope Middle School, and Redlands High School. The proposed Project would increase the population in the local and would consequently add students to the local school system. The RUSD has accounted for the generation of its student population through its facilities planning activities based on the City's buildout; as such, RUSD does not anticipate further growth in its boundary that would exceed planned development associated with the City's buildout. The Project itself would not require the construction of new or physically altered educational facilities, the construction of which could result in an environmental impact. Additionally, because the proposed Project would be required to pay required fees to fund future educational services provided by RUSD, which would be subject to Project- and site-specific environmental review, impacts associated with the need to expand educational services and facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

Parks/Recreational Facilities. The City of Redlands has 18 parks totaling approximately 253 acres of land. Prospect Park, a 33.4 acre park located at Cajon Street and Highland Avenue, is approximately 0.13 mile south of the proposed Project site. Prospect Park, is a natural area with trails and picnic facilities as well as the Avice Meeker Sewall Theater (an outdoor amphitheater with seating for more than 400 guests). The City General Plan establishes a park standard of 5.0 acres of parkland for every 1,000 residents. As of 2020, the City had an estimated population of 70,952[51] residents, pursuant to the City's park standard, would require 354.76 acres of parkland within the City. Under current conditions, the City of Redlands has a deficient of 101.76 acres of parkland, per the City's parkland standard. Build out of the City General Plan through 2035 is expected to generate an additional 140.9 acres of parkland and an increase in population by 7,452 residents, for a total buildout population of 78,404 residents. Based on the buildout population and the parkland standard, the City would require 392.02 acres of parkland to adequately serve its residents at 2035 buildout conditions. As such, the City would have a surplus of 1.88 acres of parkland once the City is built out.

The proposed Project could add an additional 75 residents to the site and to the City's population. Based on the park standard of 5.0 acre of parkland for every 1,000 residents, the proposed Project would need to develop approximately 0.375 acres of parkland. As no public park space would be developed on the site, the Project would not fulfill its requirement to dedicate 0.375 acre of parkland to the City. The Project proponent would be required to pay Development Impact Fees (DIFs) to offset impacts to parks. As of

[51] California Department of Finance, City of Redlands, Table 2: E-5 City/County Population and Housing Estimate, 4/1/2020. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed May 12, 2020.

2020, the Open Space and Park Fee established by Resolution No. 7951 of the City of Redlands implements a park DIF of $3,959.94 per single-family residential unit. The Project proponent would be required to pay the current park DIF at approval of the final plan check for the proposed Project. As discussed throughout this environmental document, development of the Project would consider all potential environmental impacts, including those that would occur with development of the on-site park. Impacts associated with the need to expand park facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

Other Public Facilities. The proposed Project could increase the City's population by up to 75 persons. The proposed Project is consistent with the General Plan land use designation and zoning, so the projected increase in population would be consistent with planned population growth in the City, as anticipated by the General Plan and regional planning documents. This minimal increase in population would incrementally increase the need for a number of public services including those listed above and others such as libraries and City administrative facilities, which would be offset through the payment of DIFs. However, the Project is not expected to result in the need to construct or expand such facilities. Therefore, impacts would be **less than significant** and no mitigation is required.

3.16 RECREATION

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. 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?	☐	☐	☒	☐
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact

Discussion of Effects: Under current conditions, the City of Redlands has a deficient of 101.76 acres of parkland, per the City's parkland standard. Build out of the City General Plan through 2035 is expected to generate an additional 140.9 acres of parkland and an increase in population by 7,452 residents, for a total buildout population of 78,404 residents. Based on the buildout population and the parkland standard, the City would require 392.02 acres of parkland to adequately serve its residents at 2035 buildout conditions. As such, the City would have a surplus of 1.88 acres of parkland once the City is built out. The proposed Project could add up to 75 additional residents to the City's population. Based on the park standard of 5.0 acre of parkland for every 1,000 residents, the proposed Project would need to develop approximately 0.375 acre of parkland. The proposed Project will permanently maintain 1.38 acres of open space, which would be owned and maintained by the future HOA. As no public park space would be developed on the site, the Project would not fulfill its requirement to dedicate 0.375 acre of parkland to the City. The Project proponent would be required to pay DIFs to offset impacts to parks. As of 2020, the Open Space and Park Fee established by Resolution No. 7951 of the City of Redlands implements a park DIF of $3,959.94 per single-family residential unit. The Project proponent would be required to pay the current park DIF at approval of the final plan check for the proposed Project.

Due to the limited increase in population and with the payment of current park DIFs, the proposed Project would nominally contribute to the increase use of existing neighborhood parks, regional parks or other recreational facilities. No substantial physical deterioration of existing park facilities would occur. Impacts would be **less than significant** and no mitigation measures would be warranted.

b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less than Significant Impact

Discussion of Effects: As no public park space would be developed on the site, the Project would not fulfill its requirement to dedicate 0.375 acre of parkland to the City. The Project proponent would be required

to pay DIFs to offset impacts to parks. As discussed throughout this environmental document, development of the Project would consider all potential environmental impacts, including those that would occur with development of the on-site open space. Impacts pertaining to the development of the on-site open space would be **less than significant**. No mitigation is required.

3.17 TRANSPORTATION

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b)?	☐	☐	☐	☒
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

The *Trip Generation and Vehicle Miles Traveled Analysis Memorandum* (**Appendix J**) prepared by LSA on May 20, 2020 contributes to the information and analysis in this section.

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact

Discussion of Effects: The proposed Project is forecast to generate approximately 264 daily trips in passenger car equivalents including approximately 22 trips during the a.m. peak hour and approximately 28 trips during the p.m. peak hour. Since the proposed Project would generate less than 100 peak hour trips, and would not be adding 50 or more peak hour trips to any major intersection, a Traffic Impact Study (TIS) is not warranted. The proposed Project, due to the low daily trips contribution, would not contribute to a degradation of existing Level of Service (LOS) at nearby intersection and roadway segments. Sight distance at each Project site access point would be reviewed in accordance with City standards. Internal circulation plans would comply with the *California Manual of Uniform Traffic Control Devices.* In addition, the proposed Project would be subject to the City of Redlands Development Impact Fee program and the Nexus traffic impact fee program adopted by San Bernardino County. The proposed Project would not conflict with a program, plan, ordinance or policy pertaining to transit, bicycle and pedestrian facilities.

Final design plans would be subject to review and approval by City staff prior to issuance of building permits, and adherence to applicable City requirements would ensure the proposed Project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system and impacts would be **less than significant**. No mitigation is required.

b. Conflict or be inconsistent with *CEQA Guidelines Section 15064.3, subdivision (b)*?

Less than Significant Impact

Discussion of Effects: As part of the *CEQA Guidelines* 2019 updates, Section 15064.3 was added and codifies that project-related transportation impacts are typically best measured by evaluating the project's vehicle miles traveled (VMT). Specifically, subdivision (b) focuses on specific criteria related to transportation analysis and is divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. Subdivision (b)(1) provides guidance on determining the significance of transportation impacts of land use projects using VMT; projects located within 0.5 mile of high quality transit should be considered to have a less than significant impact. Subdivision (b)(2) addresses VMT associated with transportation projects and states that projects that reduce VMT, such as pedestrian, bicycle, and transit projects, should be presumed to have a less than significant impact. Subdivision (b)(3) acknowledges that Lead Agencies may not be able to quantitatively estimate VMT for every project type; in these cases, a qualitative analysis may be used. Subdivision (b)(4) stipulates that Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT. Although an agency may elect to be governed by the provisions of this section immediately, it is not required until July 1, 2020. Therefore, the *City of Redlands CEQA Assessment VMT Analysis Guidelines*, adopted July 2020 (VMT guidelines) was used to determine the Project VMT impacts. Additionally, the state law also provides guidance to evaluate the Project's impacts related to VMT. California Public Resource Code Section 15064.3(b)(4) states (in part) that:

> *A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure.*

Therefore, the Project VMT per capita has been compared with the regional VMT per capita to provide a comparison between the two and has been included for disclosure purposes only. The City's VMT Guidelines provide several screening criteria for Projects within the City. Projects that cannot be screened out by the screening criteria should conduct further VMT analysis to identify Project related VMT impacts. One of the screening criteria included in the VMT guidelines is screening by project type and projects that are forecast to generate less than 3,000 MT CO2e (carbon dioxide equivalent) per year. The City's VMT Guidelines state the following:

> *Projects which generate less than 3,000 MT CO_2e per year can be presumed to have a less than significant impact on VMT. Projects which generate less than 3,000 MT CO_2e per year include the following: Single family residential – 167 dwelling units or fewer.*

As discussed previously, the proposed Project would develop 28 single-family residential units, which is significantly lower than the threshold of 167 units as stated in the City's VMT Guidelines. Therefore, based on the City's VMT Guidelines, the Project would not have any significant VMT impacts. **No impact** would occur and no mitigation is warranted.

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact

Discussion of Effects: The main access to the residential community would be from Palm Avenue. Secondary access would be provided from Alvarado Street. The England House parcel (Parcel 1) would

have independent access from Palm Avenue. The England Cottage parcel (Parcel 2) would also be independent with access from Alvarado Street. The design of roadways must provide adequate sight distance and traffic control measures. This provision is normally realized through roadway design to facilitate roadway traffic flows. Roadway frontage improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, and intersection control, as well as incorporate design standards tailored specifically to site access requirements.

Although final site plans have not yet been provided to the City, any such plans would be subject to review and approval by the City's Municipal Utilities & Engineering Department prior to issuance of building permits, and adherence to applicable requirements would ensure the proposed development would not include any sharp curves, dangerous driveway intersections, or visual obstructions for drivers negotiating roadway curves. Therefore, impacts related to a substantial increase in hazards due to a design feature or incompatible use would be **less than significant**. No mitigation is required.

d. Result in inadequate emergency access?

Less than Significant Impact

Discussion of Effects: The developer of the proposed Project would be required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures.

Access to and from the proposed Project is anticipated to include access off West Palm Avenue and secondary access on Alvarado Street. Although final site plans have not yet been provided to the City, and such plans would be subject to review and approval by the City's Fire and Police Departments to ensure adequate emergency vehicle access to and within the Project site prior the issuance of building permits. Adherence to the emergency access measures required by the City would ensure impacts related to inadequate emergency access would be **less than significant**. No mitigation is required.

3.18 TRIBAL CULTURAL RESOURCES

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☒	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

a. Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

Less than Significant with Mitigation Incorporated

Discussion of Effect: Chapter 532, Statutes of 2014 (i.e., AB 52), requires Lead Agencies evaluate a project's potential to impact "tribal cultural resources." Such resources include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." AB 52 also gives Lead Agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a "tribal cultural resource."

Per AB 52 (specifically PRC 21080.3.1), Native American consultation is required upon request by a California Native American tribe that has previously requested that the City provide it with notice of such projects. Pursuant to provisions of AB 52, the City contacted the following Native American Tribes:

- Gabrieleño Band of Mission Indians – Kizh Nation;
- Morongo Band of Mission Indians;
- Soboba Band of Luiseño Indians;
- San Manuel Band of Mission Indians; and
- Torres Martinez Desert Cahuilla Indians.

The San Manuel Band of Mission Indians (SMBMI) and the Soboba Band of Luiseño Indians (SBLI) (collectively, "Consulting Tribes") expressed interest in the Project.[52] The Consulting Tribe provided suggestions on mitigation. The Project-specific cultural resources assessment, which included an archaeological and historical records search, communication with Native American tribal representatives, and an intensive pedestrian survey of the Project site (Appendix C), did not identify Native American resources on the surface of the Project site, however Native American sites were recorded in the vicinity of the Project site. Therefore, there is the potential for the proposed Project to unearth previously undocumented Native American resources during construction. **Mitigation Measures TCR-1, CUL-1**, **CUL-2** and **CUL-5** are proposed.

Mitigation Measure TCR-1: The Participating Tribe(s) shall be contacted and provided information, as detailed in **Mitigation Measure CUL-1**, for any archaeological cultural resources discovered during Project implementation, and be given the opportunity to provide input regarding the significance and treatment of archaeological cultural resources. Should the archaeological cultural resources be determined significant, as defined by CEQA Section 15064.5(a), then **Mitigation Measures CUL-1** and **CUL-2** shall be followed. Additionally, if tribal cultural resources are inadvertently discovered during the course of ground disturbance, the following procedures shall be implemented for treatment and disposition of the discoveries:

a. Temporary Curation and Storage: During the course of construction, all discovered resources shall be temporarily curated in a secure location on site or at the offices of the qualified archaeologist. The removal of any artifacts from the Project site shall be thoroughly inventoried with a qualified archaeologist and Native American Tribal Monitor(s) oversight of the process.

b. Treatment and Final Disposition: The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, archaeological artifacts, and non-human remains discovered as part of the required mitigation for impacts to cultural resources. The landowner(s) shall relinquish the cultural resources through one or more of the following methods and provide the City of Redlands with evidence of same:

   A. Accommodate the process for on-site reburial of the discovered items with the Participating Tribes. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and recordation have been completed.

   B. A curation agreement with an appropriate qualified repository within San Bernardino County that meets federal standards per 36 CFR Part 79 and therefore would be professionally curated and made available to other archaeologists/researchers for

[52] Email dated August 14, 2018, from the City of Redlands to LSA.

further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility.

C. In the event that more than one Native American tribe or band is involved with the proposed Project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the San Bernardino County Museum by default, located at 2024 Orange Tree Lane in Redlands California.

With implementation of **Mitigation Measures TCR-1, CUL-1** and **CUL-5**, impacts to tribal cultural resources 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) would be reduced to **less than significant** levels.

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less than Significant with Mitigation Incorporated.

Discussion of Effect: CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in PRC §5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (PRC §21084.1 and *State CEQA Guidelines* §15064.5[a]).

A resource may be listed as a historical resource in the California Register if it meets any of the following National Register of Historic Places criteria as defined in PRC §5024.1(C):

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

B. Is associated with the lives of persons important in our past.

C. 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.

D. Has yielded, or may be likely to yield, information important in prehistory or history.

A "substantial adverse change" to a historical resource, according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

As detailed in response to Checklist Question 3.5a, a Project-specific cultural resources assessment was conducted for the Project site and included archaeological and historical records search, communication with Native American tribal representatives, and an intensive pedestrian survey of the Project site (Appendix C). The records search revealed 458 cultural resources were previously recorded within one mile of the Project site. The Project site has not been subject to a previous cultural resources assessment and no cultural resources have been previously identified within its boundaries. The intensive pedestrian

survey of the Project site failed to identify any prehistoric archaeological remains and the results of the survey indicate that the surface of entire Project site has been disturbed by existing uses occupying the site.

Geologic data indicate that the surface of the Project site has been stable for the last several thousand years and that any extant archaeological deposits post-dating the middle Holocene (i.e., 7,000 to 4,000 years before present) would likely be found near the modern ground surface. Late Holocene (i.e., the past 4,000 years) flood events, which have inundated much of the Redlands and San Bernardino areas, likely have deposited thin layers of sediment across the site. However, these deposits have likely been altered by existing development occupying the site. As such, archaeological remains within the Project site dating to the latter half of the Holocene would have been observed during the intensive pedestrian survey.

Due to number of recorded cultural resources and Native American site recorded within one mile of the Project site, there is the potential for the proposed Project to unearth previously undocumented cultural resources during construction. Therefore, with the implementation of **Mitigation Measures TCR-1, CUL-1**, and **CUL-5**, impacts to tribal cultural resources determined significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1 with Native American input would be reduced to **less than significant** levels.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm drainage, electrical power, natural gas or telecommunication facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d. 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?	☐	☐	☒	☐
e. Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.	☐	☐	☒	☐

a. Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm drainage, electrical power, natural gas or telecommunication facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact

Discussion of Effects: Local governments and water districts are responsible for complying with federal regulations, both for wastewater plant operation and the collection systems (e.g., sanitary sewers) that convey wastewater to the wastewater treatment facility. Proper operation and maintenance is critical for sewage collection and treatment, as impacts from these processes can degrade water resources and affect human health. For these reasons, publicly owned treatment works (POTWs) are subject to Waste Discharge Requirements (WDRs) to ensure that such wastewater facilities operate in compliance with water quality regulations set forth by the State. WDRs, issued by the State, establish effluent limits on the kinds and quantities of pollutants that POTWs can discharge. These permits also contain pollutant

monitoring, recordkeeping, and reporting requirements. Each POTW that intends to discharge into the nation's waters must obtain a WDR prior to initiating its discharge.

All new development within the City is required to comply with all provisions of the NPDES program and the City's MS4, as enforced by the RWQCB. The proposed Project would result in typical wastewater discharges that would not require new methods or equipment for treatment that are not currently permitted for the Redlands Wastewater Treatment Facility, which would serve the proposed Project. Based on modeled flows for single-family residential units, the proposed Project is estimated to generate 5,712 gallons per day of wastewater or 2,084,880 gallons of wastewater per year.[53] The City's wastewater treatment plant, Redlands Wastewater Treatment Facility, currently treats approximately 6 mgd and has the capacity to process up to 9.5 mgd.[54] The proposed Project would contribute approximately 0.095 percent of the current wastewater treatment rates of the Redlands Wastewater Treatment Facility. The proposed Project would connect to existing wastewater infrastructure, which is currently operating within capacity. Compliance with condition or permit requirements established by the City, WDRs outlined by the RWQCB, as well as requirements included in the NPDES permit, SWPPP, WQMP, and wastewater conveyance standards would ensure that wastewater discharges coming from the Project site and treated by the wastewater treatment facility system would not exceed applicable existing capacities. As such, implementation of the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment infrastructure.

The proposed Project would include the development of on-site water delivery infrastructure through 8-inch water pipes in proposed Street "A" as well as laterals serving each of the 28 proposed residential units. The proposed Project would connect to existing water mains within Palm Avenue and Alvarado Street. Since the proposed Project would not require a land-use or zoning amendment, the City has already considered the buildout of the Project site within in its future projections for potable/non-potable water requirements. As such, implementation of the proposed Project would not require or result in the relocation or construction of new or expanded water supply infrastructure.

Section 3.6 Energy of this IS/MND discusses the Project's energy requirements (i.e., electricity, fuel consumption, and natural gas consumption). The proposed Project would consume nominal amounts of electricity and natural gas when compared to what is currently being generated and being consumed within the City of Redlands and within the region. The energy suppliers would have enough electricity and natural gas to adequately serve the proposed Project once it is developed and operational. According to the Project site plans, no existing electrical/natural gas infrastructure would need to be moved on site, and the proposed Project would connect into the existing utilities from off-site locations. As such, implementation of the proposed Project would not require or result in the relocation or construction of new or expanded electricity or natural gas supply infrastructure.

Overall, impacts would be **less than significant** and no mitigation measures are warranted.

[53] Wastewater Collection System Master Plan. Prepared for the East Valley Water District. Page 3-11, Table 3-6 Land Use Sewer Generation Study Results. Prepared by Black & Veatch. October 18, 2013. (204 gallons per day/per unit × 28 single-family residential units = 5,712 gallons per day or 2,084,880 gallons of wastewater annually.

[54] *Waste Water Treatment*. City of Redlands Website. https://www.cityofredlands.org/post/wastewater-treatment (accessed May 18, 2020).

b. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact

Discussion of Effects: Water services are provided to the City and the Project site by the City's Municipal Utilities Department, which is party to the Upper Santa Ana River Watershed Integrated Regional Water Management Plan, which indicates the region is highly dependent on local water supplies. In particular, precipitation stored as groundwater provides approximately 67 percent of supplies during average years and over 70 percent of supplies during drought years.[55] The proposed Project is expected to require approximately 14,560 gallons per day of water or 16.3 acre-feet per year (afy) of water based residential and open space water generation rates.[56]

According to the City's General Plan EIR, during normal year water supply, the City would have a surplus of 28,383 acre feet in the year 2035.[57] During multiple dry years, the City would have a surplus of between 23,118 acre feet (third year) and 32,556 acre feet (first year) in the year 2035. Based on the anticipated Project water demand of 16.3 afy, the proposed Project would demand up to 0.07 percent of the City's surplus water in 2035 during the third year of a worst-case multiple dry year scenario.[58] Since the City has sufficient water supplies to meet current and future development consistent with its General Plan through the year 2035, additional water storage and treatment facilities are not anticipated to be required through build out of the General Plan in 2035.[59] Impacts would be **less than significant** no mitigation is required.

c. Result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact

Discussion of Effects: Please refer to the Response to Checklist Question 3.19A.

d. 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? Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

Less than Significant Impact

Discussion of Effects: Solid waste in the City of Redlands is primarily disposed of at the California Street Landfill which is operated by the City's Quality of Life Department and the San Timoteo Sanitary Landfill operated by San Bernardino County. The California Street Landfill, located at 2151 Nevada Street in

[55] *Upper Santa Ana River Watershed Integrated Regional Water Management Plan.* Page ES-2. City of Redlands Municipal Utilities and Engineering Department, January 2015.

[56] *Wastewater Collection System Master Plan.* Prepared for the East Valley Water District. Page 3-11. Table 3-5 Calculated Sewer Duty Factors Prepared by Black & Veatch. October 18, 2013. Single-Family Residential = a water Duty Factor of 2,000 gallons per day/acre. Open Space = a water Duty Factor of 3,000 gallons per day per acre. Calculation: (5.99 acres of residential × 2,000 GPD/Acre) + (0.86 acres of open space × 3,000 GPD/Acre) = 11,980 + 2,580 = 14,560 GPD or 5,314,400 Gallons per Year, or 16.3 acre-feet of water per year.

[57] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Page 3.14-20. City of Redlands. July 21, 2017.

[58] 16.3 afy of Project demand ÷ 23,118 afy water surplus in 2035 during the third year of a worst-case multiple dry year scenario = 0.07 percent of the City's surplus water.

[59] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Pages 3.14-20, 3.14-27, and 3.14-28. City of Redlands. July 21, 2017.

Redlands, accepts a maximum of 829 tons of solid waste per day, and as of July 25, 2018 has a remaining capacity of 5,168,162 cubic yards. The California Street Landfill's maximum permitted capacity is 11,400,000 cubic yards and it is anticipated to reach full capacity by 2042. This landfill currently accepts the following types of solid waste: construction/demolition debris, mixed municipal, other designated, and sludge (BioSolids).[60] The San Timoteo Sanitary Landfill, located at San Timoteo Canyon Road in Redlands, accepts a maximum of 2,000 tons of solid waste per day, and as of April 30, 2019 has a remaining capacity of 12,360,396 cubic yards. The San Timoteo Sanitary Landfill's maximum permitted capacity is 22,685,785 cubic yards and it is anticipated to reach full capacity by 2039.[61]

Implementation of the proposed Project could increase the City's population by up to 75 residents. Based on the same solid waste generation rate, the proposed Project would generate an estimated 443 pounds of solid waste per day (0.221 ton per day). The 0.221 ton per day of solid waste generated by potential future resident represents 0.026 percent of the maximum solid waste accepted per day by the California Street Landfill and 0.011 percent of the maximum solid waste accepter per day at the San Timoteo Sanitary Landfill. Overall, the proposed Project solid waste generation contribution to these landfills would be nominal and would not exceed the daily permitted capacities of these facilities. Impacts would be **less than significant** and no mitigation measures are warranted.

e. Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?

Less than Significant Impact

Discussion of Effects: All land uses within the City that generate waste are required to coordinate with a waste hauler to collect solid waste on a common schedule as established in applicable local, regional, and State programs. Additionally, all development within the City, including the proposed Project, is required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991), AB 939 (CalRecycle), and other local, State, and federal solid waste disposal standards.

The proposed Project would be required to comply with applicable provisions of AB 1327, AB 939, and AB 341 related to solid waste as a matter of policy. Impacts would be **less than significant** and no mitigation measures are warranted.

[60] CalRecycle, Solid Waste Information System (SWIS) Facility Detail, California Street Landfill (36-AA-0017). Website: https://www2.calrecycle.ca.gov/SWFacilities/Directory/36-AA-0017/Detail/. Accessed May 18, 2020.

[61] CalRecycle, Solid Waste Information System (SWIS) Facility Detail, California Street Landfill (36-AA-0017). Website: https://www2.calrecycle.ca.gov/SWFacilities/Directory/36-AA-0017/Detail/. Accessed May 18, 2020.

3.20 WILDFIRE

If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. 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?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact

Discussion of Effect: Please refer to Section 3.9(f) of this IS/MND for a discussion on impacts pertaining to the Project's potential to substantially impair an adopted emergency response plan or emergency evacuation plan. **No impact** would occur and no mitigation is required.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact

Discussion of Effect: The Project site is within a LRA Non-Very High Fire Hazard Severity Zone according to CAL FIRE mapping.[62] The General Plan EIR, Figure 3.7-3, indicates that the Project site is located in an area designated as a Moderate Fire Level Threat.[63] Areas of High, Very High and Extreme Fire Threat Level lands are located approximately 1.2 miles south and southwest of the Project site. Similar to adjacent properties, the site is relatively flat. No hillside areas or natural areas prone to wildfires are located in the immediate Project vicinity as this area of Redlands is urbanized with single-family residential neighborhoods. Winds may push wildfire smoke into the area of the proposed Project; however, these

[62] CAL FIRE, Fire Hazard Severity Zones Maps, City of Redlands Map. Website: https://osfm.fire.ca.gov/media/5949/redlands.pdf. Accessed May 12, 2020.

[63] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.7: Hazards and Hazardous Materials, Figure 3.7-3: Fire Hazards and Fire Safety Services.

conditions would be temporary and if conditions warrant the local air quality control district would warn residents of potential impacts due to wildfire smoke. The proposed Project would be required to implement and abide to Redland's General Plan policies (specifically 7-A.83 through 7-A.106) that promote fire safety through agency cooperation and management of risk factors; adhere to applicable building and fire codes; and implement existing programs such as weed abatement and education under the Redlands Fire Department; all of which would reduce the wildfire risk at the Project site. Due to the nature of the Project vicinity, on-site and adjacent areas have minimal capability to support a wildfire. Impacts related to this issue would be **less than significant**; therefore, no mitigation is warranted.

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may result in temporary or ongoing impacts to the environment?

No Impact

Discussion of Effect: The Project is located an urbanized area served by existing water and roadway infrastructure and does not require the installation or maintenance of wildland protection features such as fire roads, fuel breaks, or emergency water sources. In the absence of any need for such features, **no impact** (temporary or ongoing) would result from development of the proposed uses. No mitigation is required.

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact

Discussion of Effect: Similar to adjacent properties, the Project site is flat. No hillside areas or natural areas prone to wildfire fire are located in the immediate Project vicinity. As the Project would not expose persons or structures to post-fire slope instability or post-fire drainage, **no impact** would occur. In the absence of any impact, no mitigation is warranted.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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.)	☐	☐	☒	☐
c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation Incorporated

Discussion of Effects: The proposed Project's impacts to biological resources and cultural resources were analyzed in this Initial Study, and all direct, indirect, and cumulative impacts were determined to have no impact, a less than significant impact, or reduced to a less than significant impact with implementation of mitigation. No endangered or threatened species were identified on the Project site. Development of the proposed Project would not cause fish or wildlife populations to drop below self-sustaining levels or restrict the movement/distribution of a rare or endangered species. The proposed Project would not affect any threatened or endangered species or associated habitat. Potential impacts to migratory and nesting birds would be mitigated to **less than significant** levels with implementation of **Mitigation Measure BIO-1**.

Development of the proposed Project would not affect known historic, archaeological, or paleontological resources. The proposed Project would retain the two existing historic single-family residential units on site. There are no known unique ethnic or cultural values associated with the Project site, nor are known religious or sacred uses associated with the Project site. **Mitigation Measure CUL-2 and CUL-3** has been identified to confirm the presence or absence of subsurface cultural resources and/or human remains on the Project site. Furthermore, **Mitigation Measures TCR-1** and **TCR-2** have been identified to address potential impacts if subsurface cultural or paleontological resources would be encountered during construction operations. Additionally, the Project applicant is required to comply with California Code of Regulations (CCR) Section 15064.5(e), California Health and Safety Code Section 7050.5, and Public Resources Code (PRC) Section 5097.98 as a matter of policy in the event human remains are encountered at any time. To ensure an exclusionary buffer of 100 feet around any encounter with human remains, **Standard Condition CUL-1** is required. Adherence to **Mitigation Measures CUL-1, TCR-1, TCR-2,** and **Standard Condition CUL-1**, as well as regulations governing human remains, would reduce potential impacts to cultural and paleontological resources to **less than significant with implementation of mitigation**.

Mitigation: Previously identified Mitigation Measures **BIO-1, CUL-1, TCR-1,** and **TCR-2.**

b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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.)

Less Than Significant Impact

Discussion of Effects: The proposed Project has either no impact, a less than significant impact, or a less than significant impact with mitigation incorporated with respect to all environmental issues pursuant to CEQA. Due to the limited scope of direct physical impacts to the environment associated with the proposed Project, the Project's impacts are primarily Project-specific in nature.

The proposed Project site is located within an area has been designated by the City for residential uses. The proposed Project would not exceed significance thresholds for air-quality impacts during short-term construction-related activities or for the operational lifetime of the Project. As such, standard conditions and/or mitigation measures to reduce air quality impacts are not warranted. Construction and operational noise would not exceed City thresholds; therefore, no standard conditions or mitigation measures are warranted.

The cumulative effects resulting from buildout of the City's General Plan were previously identified in the General Plan EIR. The type, scale, and location of the proposed Project is consistent with City's General Plan and zoning designation and is compatible with the pattern of development on adjacent properties pursuant to the Suburban Residential zoning designation. Because of this consistency, the potential cumulative environmental effects of the proposed Project would fall within the impacts identified in the City's General Plan EIR. The proposed Project is subject to required "fair share" development impact fees will be paid by the applicant. The proposed Project would have a **less than cumulatively considerable impact**.

c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact

Discussion of Effects: The South Coast Air Basin is currently designated as a non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. Development of the Project would contribute to air pollutant emissions on a short-term basis. The proposed Project is required to comply with applicable SCAQMD Rules and California Code of Regulations. The proposed Project would not exceed significance thresholds for air-quality impacts during short-term construction-related activities or for the operational lifetime of the Project. As such, standard conditions and/or mitigation measures to reduce air quality impacts are not warranted.

Like all of Southern California, the Project site could be subject to strong ground shaking resulting from large earthquakes. Proper engineering design and construction in conformance with the 2019 CBC standards and Project-specific geotechnical recommendations (**Standard Condition GEO-1**) would ensure that impacts from strong seismic ground shaking and unstable soils would be **less than significant.**

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APPENDIX A

PROJECT PLAN SETS (REVISED)

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APPENDIX B

LESA MODEL

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APPENDIX C

AIR QUALITY/ENERGY/GREENHOUSE GAS TECHNICAL MEMORANDUM

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APPENDIX D

BIOLOGICAL RECONNAISSANCE SURVEY

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APPENDIX E

CULTURAL RESOURCES ASSESSMENT/HISTORICAL RESOURCES EVALUATION

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APPENDIX F

PRELIMINARY GEOTECHNICAL EVALUATION REPORT

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APPENDIX G

PHASE 1 ENVIRONMENTAL ASSESSMENT

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APPENDIX H

HYDROLOGY AND HYDRAULICS PRELIMINARY REPORT AND WATER QUALITY MANAGEMENT REPORT

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APPENDIX I

NOISE IMPACT ASSESSMENT

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APPENDIX J

TRIP GENERATION AND VMT IMPACT MEMORANDUM

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APPENDIX K

MITIGATION MONITORING AND REPORTING PROGRAM

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