CEDAR VILLAS PRIVATE RESIDENTIAL NEIGHBORHOOD

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Prepared For:

City of Rialto
Planning Division
150 S. Palm Avenue
Rialto, CA 92376

Prepared By:

Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408

August 2020

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SECTION 1
INTRODUCTION

Independently reviewed, analyzed and exercised judgment in making the determination, by the City Council on _____, pursuant to Section 21082 of the California Environmental Quality Act (CEQA).

CEQA requires the preparation of an Initial Study when a proposal must obtain discretionary approval from a governmental agency and is not exempt from CEQA. The purpose of the Initial Study is to determine whether or not a proposal, not except from CEQA, qualifies for a Negative Declaration (ND) or whether or not an Environmental Impact Report (EIR) must be prepared.

1. **Project Title:** Cedar Villas Private Residential Neighborhood (Related Files: General Plan Amendment No. 2019-0004, Zone Change No. 2019-0003, Tentative Tract Map No. 2019-0002 (TTM No. 20294), Precise Plan of Design No. 2020-0005, & Environmental Assessment Review No. 2019-0033)

2. **Lead Agency Name:** City of Rialto
Planning Division
150 South Palm Avenue
Rialto, CA 92376

3. **Contact Person:** Daniel Casey, Senior Planner
Phone Number: (909) 820-2535
Email: dcasey@rialtoca.gov

4. **Project Location:** 9561 Cedar Avenue, City of Rialto.

5. **Geographic Coordinates of Project Site**: 34° 04’ 48.12” N, 117° 23’ 44.77” W

6: **USGS Topographic Map:** Fontana 7.5-Minute USGS Topographic Quadrangle

7: **Public Land Survey System:** Township 1 South, Range 5 West, Section 15 - NE 1/4

8. **Thomas Guide Location:** Map 605, Grid E4, 2013 San Bernardino & Riverside Counties

9. **Assessor Parcel Number:** 0250-091-25, -26

10. **General Plan and Zoning Designations:** Residential 6 and Single-Family Residential (R-1C)

11. **Description of Project:** Monte Vista Assets, Inc. (“Project Applicant”) has submitted a Land Use Application to the City of Rialto for a General Plan Amendment, Zone Change, and Tentative Tract Map. The Project Applicant is proposing the development of 22 detached single-family, two-story homes on Cedar Avenue, in the City of Rialto. The

Project Site, located at 9561 Cedar Avenue (See Figure 1-Regional Location and Figure 2-Project Vicinity), is currently vacant with no existing structures. The Project Site is described as Assessor's Parcel Nos. 0250-091-25 and -26. The Proposed Project has a density of 7.6 dwelling units per acre and would be a gated community that is referred to as "Cedar Villas Private Residential Neighborhood." Access to the Project Site would be from Cedar Avenue (See Figure 3-Site Plan). Each dwelling unit is proposed to include a two-car garage with a two-car driveway, for a total of four parking spaces per unit. Development of the Proposed Project also includes 19 additional parking spaces along the internal roads and a 9,030 square-foot park.

The north, east, and south properties of the Project Site have a General Plan designation of R6 (Residential 6) and are zoned R-1C (Single Family Residential). To the west of the Project Site is the unincorporated community of Bloomington in San Bernardino County and properties are designated in the Bloomington Community Plan as RS (Residential Single). The 3.17-acre Project Site is currently designated R6 and zoned R-1C (See Figure 4-Existing Zoning and Figure 5 Existing General Plan Land Use). Approval of a General Plan Amendment and Zone Change is requested to change the designation to R12 (Residential 12) and the zoning to R-3 (Multi-Family Residential) to allow for the proposed density of 7.6 dwelling units per acre.

The R-1C zoning designation allows a minimum lot area of 7,700 square feet, minimum lot width of 70 feet, minimum lot depth of 100 feet, median and average dwelling size not less than 1,200 square feet, with a minimum dwelling size of 1,000 square feet, exclusive of garages, porches, eaves or similar features. The R6 land use designation allows for a density of 2.1-6 dwelling units per acre. The R-3 zoning designation allows any use permitted in the R-1 zone including multiple family dwellings consisting of four or less units, multiple family dwellings consisting of five or more units (subject to the issuance of a Conditional Development Permit by the City Planning Commission), dwelling groups, incidental and accessory buildings and uses on the same lot which are necessary for the operation of any permitted use. The R12 land use designation allows for a density of 6.1-12 dwelling units per acre.

The current General Plan land use designation of R6 for the Project Site would allow a maximum of 19 dwelling units on the overall site. The maximum population increase with the current General Plan land use designation would anticipate a maximum of 73 additional residents. With the approval of the GPA to make the Project Site's General Plan land use designation R12, a maximum of 38 dwelling units would be allowed on the Project Site with an associated population of 145 additional residents. The Proposed Project proposes to develop 22 dwelling units on the overall site which would result in a maximum population increase of approximately 85 residents. This would result in an approximate 15 percent increase in the current General Plan anticipated number of residences and population at buildout for the Project Site.

12. Surrounding Land Uses and Setting:

	GENERAL PLAN DESIGNATION/ZONING	**EXISTING**
PROJECT SITE	Residential 6/R-1C	Undeveloped
NORTH	Residential 6/R-1C	Residential Development
EAST	Residential 6/R-1C	Residential Development
SOUTH	Residential 6/R-1C	Residential Development
WEST	County of San Bernardino BL/RS	Residential Development

13. Other agencies whose approval is required (e.g., permits, finance approval, or participation agreement):

- California Regional Water Quality Control Board, Santa Ana Region, Storm Water Pollution Prevention Plan (SWPPP) for compliance with State's General Construction Permit

- City of Rialto discretionary actions:
  - Approval of a Precise Plan of Design
  - Approval of a Tentative Tract Map
  - Approval of a General Plan Amendment
  - Approval of a Zone Change

1.1 EVALUATION FORMAT

This Initial Study is prepared in compliance with the California Environmental Quality Act (CEQA) Guidelines. This format of the study is presented as follows. The project is evaluated based upon its effect on seventeen (17) major categories of environmental factors. Each factor is reviewed by responding to a series of questions regarding the impact of the project on each element of the overall factor. The Initial Study Checklist provides a formatted analysis that provides a determination of the effect of the project on the factor and its elements. The effect of the project is categorized into one of the following four categories of possible determinations:

Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

Substantiation is then provided to justify each determination. One of the four following conclusions is then provided as a summary of the analysis for each of the major environmental factors.

1. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.
2. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.
3. Possible significant adverse impacts have been identified or anticipated and the following mitigation measures are required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are: (List mitigation measures)
4. Significant adverse impacts have been identified or anticipated. An Environmental Impact Report (EIR) is required to evaluate these impacts, which are: (List the impacts requiring analysis within the EIR).

At the end of the analysis the required mitigation measures are restated and categorized as being either self-monitoring or as requiring a Mitigation Monitoring and Reporting Program.

1.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

1.3 ENVIRONMENTAL DETERMINATION

On the basis of this Initial Study, the City of Riverside Environmental Review Committee finds:

☐ 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 would 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 EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

_____ _____
Signature Date

_____ _____
Printed Name For

SECTION 2
PROJECT DESCRIPTION

2.1 PURPOSE OF THIS DOCUMENT

The purpose of this Initial Study is to identify potential environmental impacts associated with a Proposed Project being the development of a gated residential community on approximately 3.17 acres located on the east side of Cedar Avenue between Woodcrest and Miramont Streets in the City of Rialto. This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines.

Pursuant to Section 15367 of the State CEQA Guidelines, the City of Rialto is the Lead Agency in the preparation of this Initial Study. The City has primary responsibility for approval or denial of this project. The intended use of this Initial Study is to provide adequate environmental analysis related to project construction and operational activities of the Proposed Project.

2.2 PROJECT LOCATION

The Project Site is located in the southern portion of the City of Rialto on the east side of Cedar Avenue between Woodcrest Street and Miramont Streets. Figure 1, Regional Location Map, depicts the location of the Project Site in context to its regional setting. Figure 2 shows the Project Site Vicinity Map, which consists of an approximately 3.17-acre site. The Project Site is located in the NE ¼ of Section 15, Township 1 South, Range 5 West on the Fontana USGS 7.5-minute Quadrangle Map. The Project Site consists of two San Bernardino County Assessor Parcels: 0250-091-25 and -26.

2.3 PROJECT DESCRIPTION

Monte Vista Assets, Inc. ("Project Applicant") has submitted a Land Use Application to the City of Rialto for a General Plan Amendment, Zone Change, and Tentative Tract Map. The Project Applicant is proposing the development of 22 detached single-family, two-story homes on Cedar Avenue, in the City of Rialto. The Project Site, located at 9561 Cedar Avenue (See Figure 1-Regional Location and Figure 2-Project Vicinity), is currently vacant with no existing structures. The Project Site is described as Assessor's Parcel Nos. 0250-091-25 and -26. The Proposed Project has a density of 7.6 dwelling units per acre and would be a gated community that is referred to as "Cedar Villas Private Residential Neighborhood." Access to the Project Site would be from Cedar Avenue (See Figure 3-Site Plan). Each dwelling unit is proposed to include a two-car garage with a two-car driveway, for a total of four parking spaces per unit. Development of the Proposed Project also includes 22 additional parking spaces along the internal roads and a 9,037 square-foot park.

The north, east, and south properties of the Project Site have a General Plan designation of R6 (Residential 6) and are zoned R-1C (Single Family Residential). To the west of the Project Site is the unincorporated community of Bloomington in San Bernardino County and properties are designated in the Bloomington Community Plan as RS (Residential Single). The 3.17-acre Project

Site is currently designated R6 and zoned R-1C (See Figure 4-Existing Zoning and Figure 5 Existing General Plan Land Use). Approval of a General Plan Amendment and Zone Change is requested to change the designation to R12 (Residential 12) and the zoning to R-3 (Multi-Family Residential) to allow for the proposed density of 7.6 dwelling units per acre.

The R-1C zoning designation allows a minimum lot area of 7,700 square feet, minimum lot width of 70 feet, minimum lot depth of 100 feet, median and average dwelling size not less than 1,200 square feet, with a minimum dwelling size of 1,000 square feet, exclusive of garages, porches, eaves or similar features. The R6 land use designation allows for a density of 2.1-6 dwelling units per acre. The R-3 zoning designation allows any use permitted in the R-1 zone including multiple family dwellings, consisting of four or less units, multiple family dwellings consisting of five or more units (subject to the issuance of a Conditional Development Permit by the City Planning Commission), dwelling groups, incidental and accessory buildings and uses on the same lot which are necessary for the operation of any permitted use. The R12 land use designation allows for a density of 6.1-12 dwelling units per acre.

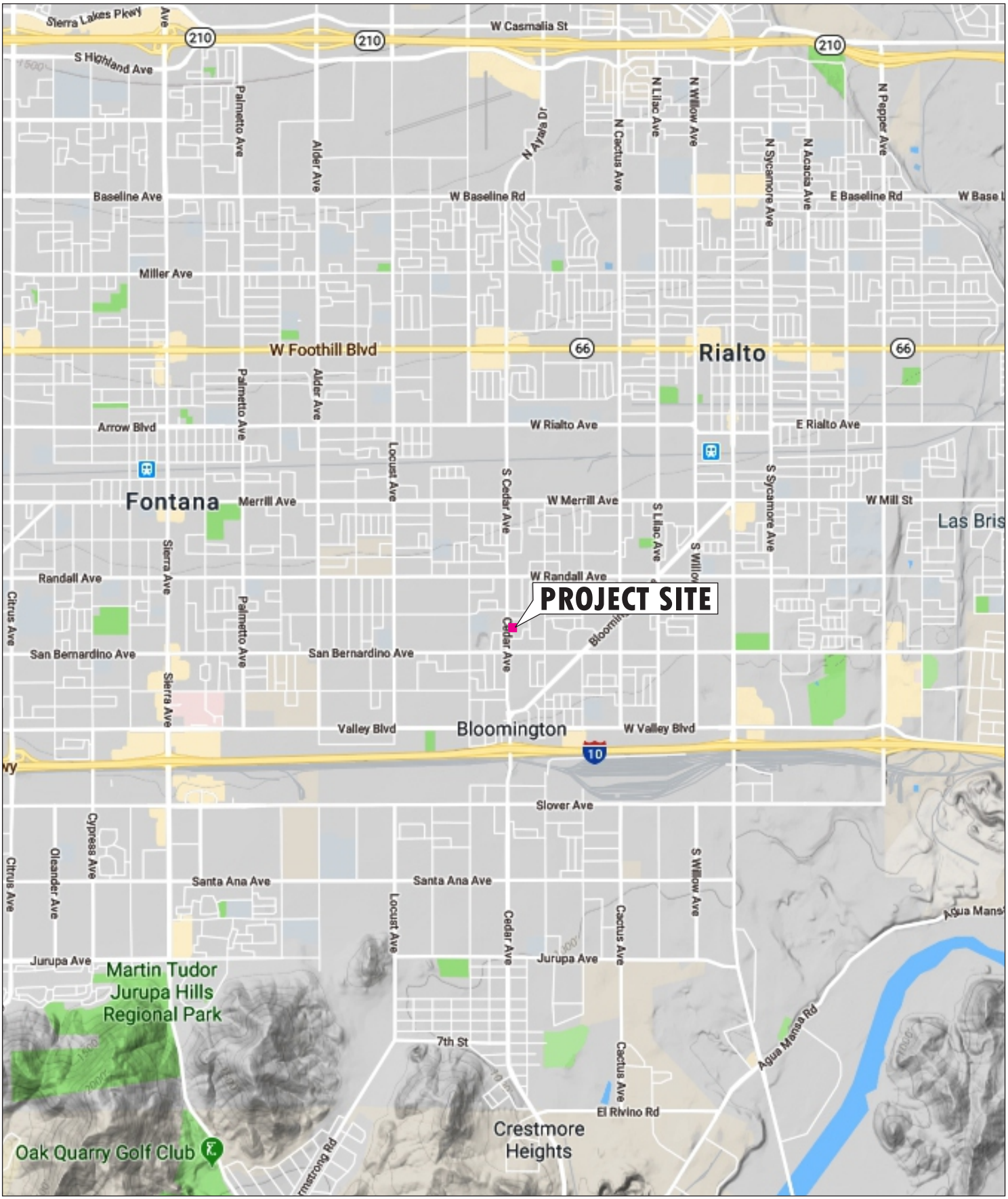
The current General Plan land use designation of R6 for the Project Site would allow a maximum of 19 dwelling units on the overall site. The maximum population increase with the current General Plan land use designation would anticipate a maximum of 73 additional residents. With the approval of the GPA to make the Project Site's General Plan land use designation R12, a maximum of 38 dwelling units would be allowed on the Project Site with an associated population of 145 additional residents. The Proposed Project proposes to develop 22 dwelling units on the overall site which would result in a maximum population increase of approximately 85 residents. This would result in an approximate 15 percent increase in the current General Plan anticipated number of residences and population at buildout for the Project Site.

2.4 EXISTING CONDITIONS AND SURROUNDING LAND USES

The Project Site is located in the southern portion of the City of Rialto. The unincorporated area Bloomington borders the western boundary of the Project Site. The Project Site is currently designated under the City's General Plan as Residential 6 (R6) which allows for a density of 2.1 to 6 dwelling units per acre with an estimated population density of 8 to 23 persons per acre. Within this designation, development may consist of detached units in suburban-style subdivisions, with one unit per lot. Additional permitted uses, consistent with zoning regulations, may include group homes, public facilities, and utility support systems. The northern, eastern and southern land uses are designated Residential 6 and contain single-family homes. The western land uses are designated RS- Single Residential as shown on the Bloomington Community Plan Figure 2-1.

2.5 INTENDED USE OF THIS DOCUMENT

This Initial Study addresses the potential impacts of the Proposed Project, as well as those of the associated discretionary actions and approvals required to implement the Proposed Project, and those of subsequent construction and operational activities.



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Source: Lilburn Corp., August, 2019.

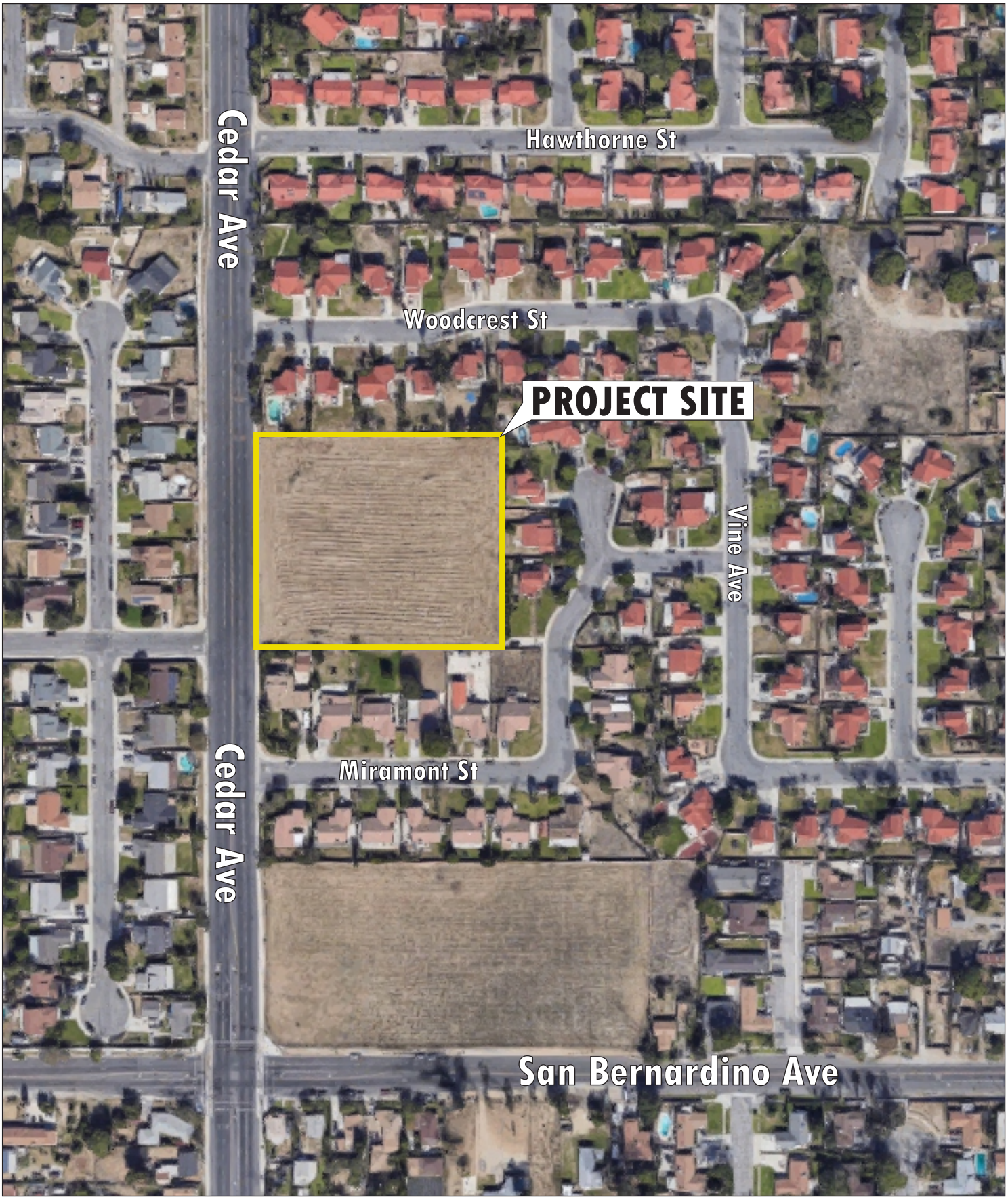
LILBURN CORPORATION

REGIONAL LOCATION

Cedar Villas Residential

City of Rialto, California

FIGURE 1



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FEET

Source: Lilburn Corp., August, 2019.

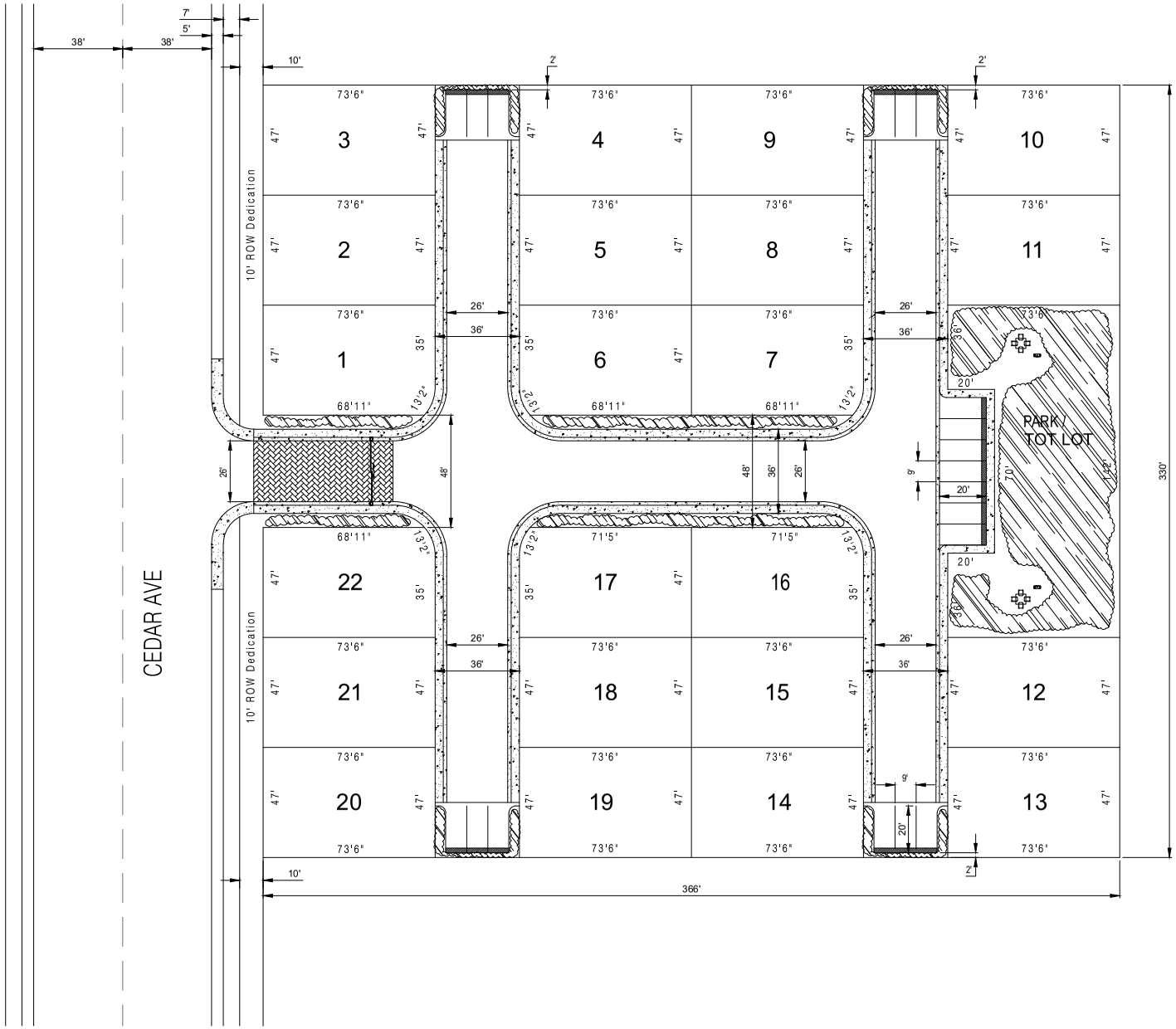
LILBURN CORPORATION

PROJECT VICINITY

Cedar Villas Residential

City of Rialto, California

FIGURE 2



GENERAL NOTES:

1. ASSESSOR'S PARCEL No.: 0250~091~25 / 0250~091~26
2. PROPERTY ADDRESS: 9561 & 9587 CEDAR AVE, BLOOMINGTON, CA 92316
3. GROSS ACREAGE: 3.17 ACRES
4. NUMBER OF LOTS: 22 LOTS
5. PROJECT DENSITY: 7.6 DU PER AC
6. EXISTING ZONING: R~1C
7. PROPOSED ZONING: R~3
8. ONSITE PARKING: 2 IN EACH GARAGE, 2 IN DRIVEWAY
9. COMMON PARKING: 19 SPACES/22 HOMES=0.9 PER HOME
10. OPEN SPACE REQUIRED: 8,800 SF
11. OPEN SPACE PROVIDED: 9,030 SF

LEGEND:

CONCRETE SURFACE
ASPHALT SURFACE
PAVING
LANDSCAPE AREA
STEEL GATES

NORTH

Sheet Contents: SITE PLAN
Date:
Drawn By:
Revision:
Checked By:
File Name:
Project No:
Sheet Number: A-1.0

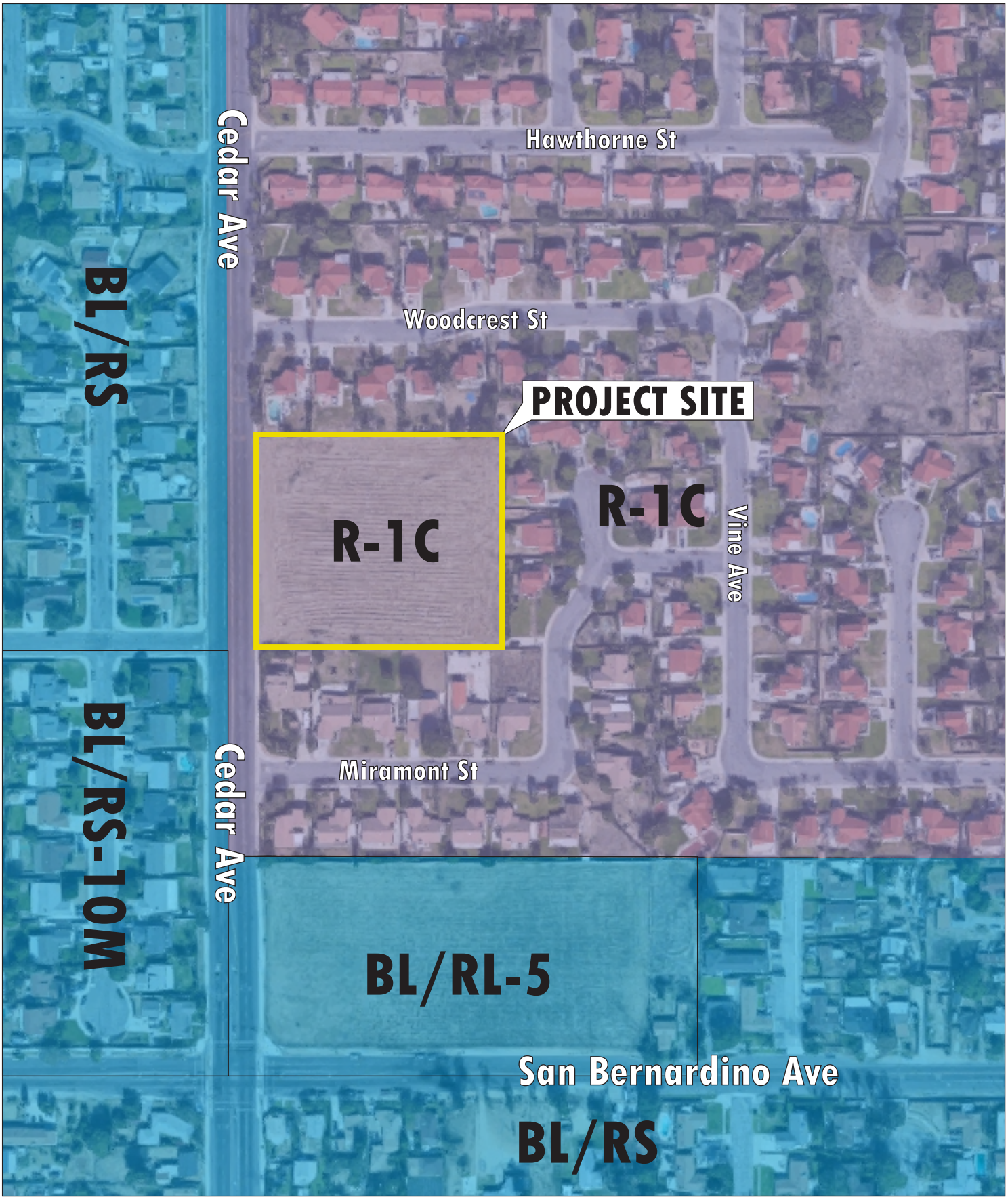
SITE PLAN

Cedar Villas Residential

City of Rialto, California

FIGURE 3

LILBURN CORPORATION



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Source: Lilburn Corp., August, 2019.

LILBURN CORPORATION

LEGEND

City of Rialto

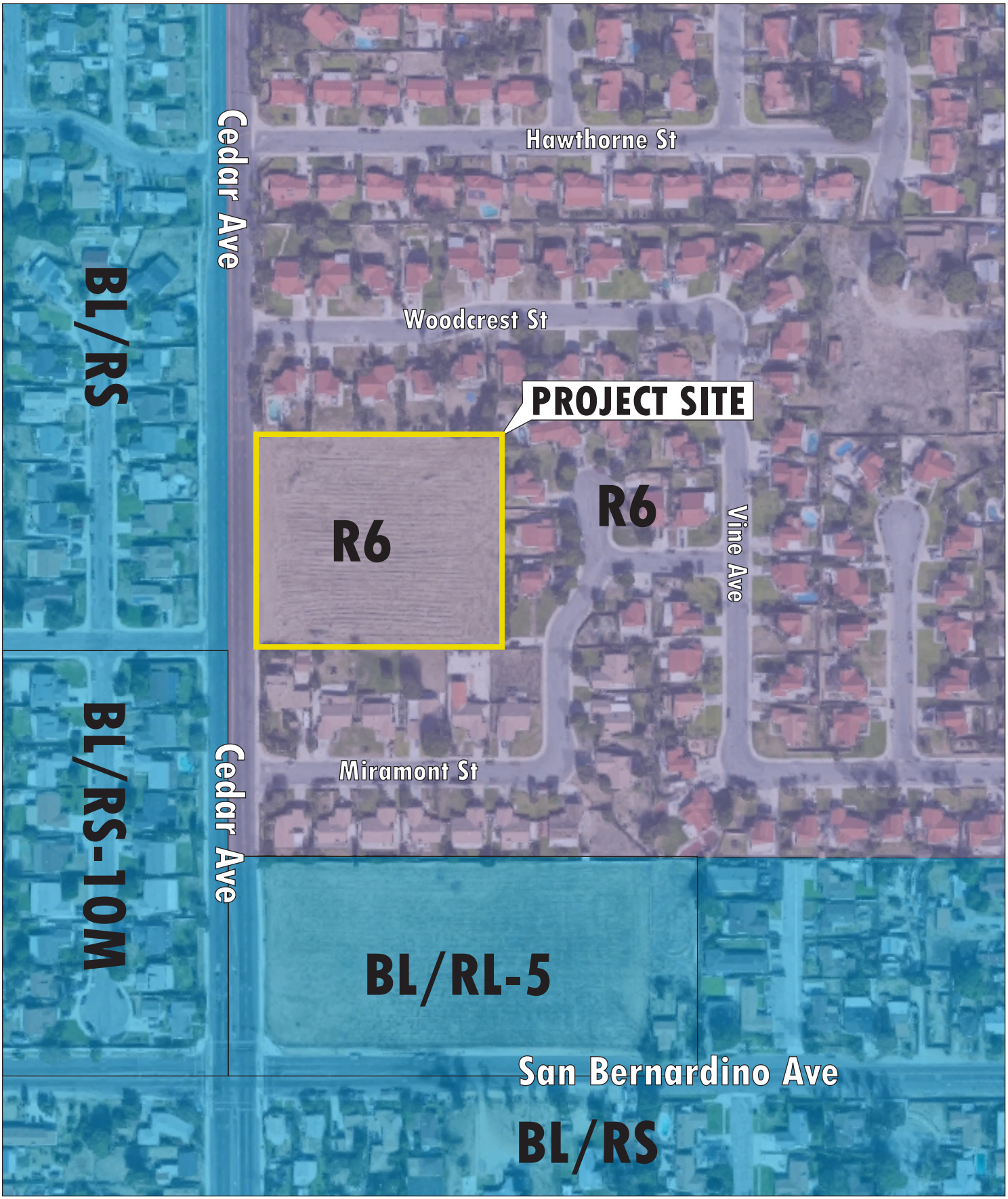
County of San Bernardino

EXISTING ZONING

Cedar Villas Residential

City of Rialto, California

FIGURE 4



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Source: Lilburn Corp., August, 2019.

LILBURN CORPORATION

LEGEND

City of Rialto

County of San Bernardino

EXISTING GENERAL PLAN LAND USE

Cedar Villas Residential

City of Rialto, California

FIGURE 5

SECTION 3
ENVIRONMENTAL CHECKLIST FORM

I. AESTHETICS – Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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)	Substantially degrade the existing visual character or quality of the site and its surroundings? 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, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a) **Less than Significant Impact.** The City of Rialto General Plan identifies the views of the San Gabriel and San Bernardino Mountains as backdrops for creating scenic vistas throughout the City. General Plan policy states that views of the mountains should be protected by ensuring that building heights are consistent with the scale of surrounding, existing development (Policy 2-14.1), and by ensuring that building materials do not produce glare, such as polished metals or reflective windows (Policy 2-14.3). The San Bernardino Mountains are located to the northeast of the Project Site and the San Gabriel Mountains are located to the northwest. The Proposed Project would include the development of 22 single-family two-story homes which would be comparable to the height of nearby single-family residences surrounding the Project Site. The Proposed Project requires a General Plan Amendment and Zone Change to make the Proposed Project's density consistent with the General Plan. Implementation of the Proposed Project would be consistent with the surrounding residential land uses and would not have significant impacts on scenic vistas of the San Gabriel and San Bernardino Mountains. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b) **No Impact.** There are no significant scenic resources known to exist in the immediate vicinity of the Project Site. Cedar Avenue borders the Project Site on the west and is not considered a scenic highway by either the City, the County of San Bernardino, or the State of California. The Project Site is not adjacent to or in the vicinity of a state scenic highway.

Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

c) **Less than Significant Impact.** The Project Site is currently vacant and is bordered by residential development to the north, south, east and west. The Proposed Project will subdivide the Project Site into 22 single-family homes which would be consistent with the proposed Zone Change and existing surrounding land uses (i.e., single-family residential to the north, south, east and west). The Proposed Project would not degrade the visual character or quality of the Site or its surroundings. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

d) **Less than Significant Impact.** Implementation of the proposed 22 homes would not generate a significant amount of light and glare when compared to the surrounding area which includes existing lighting from urban development including streetlights and residential lighting. The design and placement of light fixtures within the Proposed Project would be reviewed for consistency with City standards and subject to City-approval. Standards require shielding, diffusing, or indirect lighting to avoid glare. Lighting would be selected and located to confine the area of illumination to on-site streets. Lighting would be consistent with adjacent residential development to the north, east, south and west. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

II. AGRICULTURE AND FORESTRY RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Will the project:				

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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 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) **No Impact**. The Department of Conservation's Farmland Mapping and Monitoring Program identifies the Project Site as "Urban and Built-Up Land" in its California Important Farmland Finder. No prime farmland, unique farmland, or farmland of statewide importance was identified in the Program to occur at the Project Site or in its immediate vicinity. Development of the Project Site would not convert farmland to a non-agricultural use. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

b) **No Impact.** The Project Site is recognized as "Urban and Built-Up Land" as identified in the latest San Bernardino County Williamson Act Map (FY 2015/2016) prepared by the California Department of Conservation's Division of Land Resource Protection, and therefore no Williamson Act contracts apply to the site. The City of Rialto's General Plan does not designate any of the land on or within the vicinity of the Project Site for agricultural use. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

c) **No Impact.** Implementation of the Proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned for Timberland Production because the Project Site is within a predominantly urbanized area

and these designations do not occur in the vicinity. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

d) **No Impact.** The Project Site does not support forest land and implementation of the Proposed Project would not convert forest land to non-forest use. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

e) **No Impact.** The Project Site does not support agricultural or forest land uses that would be lost as a result of the Proposed Project implementation. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

III. AIR QUALITY

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Will the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?	☐	☐	☒	☐

a) **Less than Significant Impact.** The Project Site is located in the South Coast Air Basin (SCAB). The South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality issues and regulations within the SCAB. The Air Quality Management Plan (AQMP) for the basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and federal air quality standards. The most recent AQMP (AQMP 2016) was adopted by the SCAQMD on March 3, 2017. The 2016 AQMP incorporates the latest scientific and technological information and planning assumptions, including transportation control measures developed by the Southern California Association of Governments (SCAG) from the 2016 Regional Transportation Plan/Sustainable Communities Strategy, any updated emission inventory methodologies for various source categories.

The City of Rialto currently designates the Project Site as R6 (Residential 6), which permits development densities between 2.1-6 dwelling units per acre (du/acre), and the site is zoned Single Family (R-1C). The Proposed Project includes a General Plan Amendment (GPA) and Zone Change (ZC) which would change the land use designation of the Project Site to Residential 12 (R12), which permits development densities between 6.1-12 du/acre, and zoning to Multiple Family (R-3). The Proposed Project would result in an approximate 15 percent increase of the number of residential units allowed for the Project Site. With implementation of the GPA and ZC, the Proposed Project would be an acceptable use within the R12 land use category and would not contribute a significant increase in air emissions over buildout of the City as included in the current AQMP. Tables 1 through 6 below show that air quality impacts are less than significant based on the SCAQMD thresholds. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

b) **Less than Significant Impact.** The Proposed Project's construction and operational emissions were screened using California Emissions Estimator Model (CalEEMod) version 2016.3.2 prepared by Lilburn Corporation, dated February 13, 2020 (See Appendix A for summary tables). CalEEMod was utilized to estimate the on-site and off-site emissions. The emissions incorporate Rule 402 and 403 by default as required during construction. The criteria pollutants screened for include reactive organic gases (ROG), nitrous oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO_2), and particulates (PM_{10} and $PM_{2.5}$). Two of the analyzed pollutants, ROG and NO_x, are ozone precursors. Both summer and winter season emission levels were estimated.

Construction Emissions

Construction emissions are considered short-term, temporary emissions and were modeled with the following construction parameters: site preparation, site grading (fine and mass grading), building construction, paving, and architectural coating. The resulting emissions generated by construction of the Proposed Project are shown in Table 1 and Table 2, which represent summer and winter construction emissions, respectively.

Table 1
Summer Construction Emissions
(Pounds per Day)

Source/Phase	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Site Preparation	4.1	42.4	21.5	0.0	10.3	6.5
Grading	2.4	26.4	16.1	0.0	4.2	2.7
Building Construction	0.1	0.9	1.2	0.0	0.3	0.1
Paving	1.2	10.8	12.3	0.0	0.6	0.5
Architectural Coating	14.5	1.5	1.8	0.0	0.1	0.1
Highest Value (lbs/day)	**14.5**	**42.4**	**21.5**	**0.0**	**10.3**	**6.5**
SCAQMD Threshold	75	100	550	150	150	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod.2016.3.2 Summer Emissions.
Phases do not overlap and represent the highest concentration.

Table 2
Winter Construction Emissions
(Pounds per Day)

Source/Phase	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Site Preparation	4.1	42.4	21.5	0.0	10.3	6.5
Grading	2.4	26.4	16.1	0.0	4.2	2.7
Building Construction	2.1	19.2	16.8	0.0	1.1	1.1
Paving	1.2	10.8	12.3	0.0	0.6	0.5
Architectural Coating	14.5	1.5	1.8	0.0	0.1	0.1
Highest Value (lbs/day)	**14.5**	**42.4**	**21.5**	**0.0**	**10.3**	**6.5**
SCAQMD Threshold	75	100	550	150	150	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod.2016.3.2 Winter Emissions.
Phases do not overlap and represent the highest concentration.

As shown in Table 1 and Table 2, construction emissions during either summer or winter seasonal conditions would not exceed SCAQMD thresholds. Impacts would be less than significant, and no mitigation measures would be required.

Compliance with SCAQMD Rules 402 and 403

Although the Proposed Project does not exceed SCAQMD thresholds for construction emissions, the Project Proponent would be required to comply with all applicable SCAQMD rules and regulations as the SCAB is in non-attainment status for ozone and suspended particulates (PM_{10} and $PM_{2.5}$).

The Project Proponent would be required to comply with Rules 402 nuisance, and 403 fugitive dust, which require the implementation of Best Available Control Measures (BACMs) for each fugitive dust source, and the AQMP, which identifies Best Available Control Technologies (BACTs) for area sources and point sources. The BACMs and BACTs would include, but not be limited to the following:

1. The Project Proponent shall ensure that any portion of the site to be graded shall be pre-watered prior to the onset of grading activities.

   (a) The Project Proponent shall ensure that watering of the site or other soil stabilization method shall be employed on an on-going basis after the initiation of any grading activity on the site. Portions of the site that are actively being graded shall be watered regularly (2x daily) to ensure that a crust is formed on the ground surface and shall be watered at the end of each workday.

   (b) The Project Proponent shall ensure that all disturbed areas are treated to prevent erosion until the site is constructed upon.

   (c) The Project Proponent shall ensure that landscaped areas are installed as soon as possible to reduce the potential for wind erosion.

(d) The Project Proponent shall ensure that all grading activities are suspended during first and second stage ozone episodes or when winds exceed 25 miles per hour.

During construction, exhaust emissions from construction vehicles and equipment and fugitive dust generated by equipment traveling over exposed surfaces, would increase NO_X and PM_{10} levels in the Applicant/Contractor would be required to implement the following conditions as required by SCAQMD:

2. To reduce emissions, all equipment used in grading and construction must be tuned and maintained to the manufacturer's specification to maximize efficient burning of vehicle fuel.

3. The Project Proponent shall ensure that existing power sources are utilized where feasible via temporary power poles to avoid on-site power generation during construction.

4. The Project Proponent shall ensure that construction personnel are informed of ride sharing and transit opportunities.

5. All buildings on the Project Site shall conform to energy use guidelines in Title 24 of the California Administrative Code.

6. The operator shall maintain and effectively utilize and schedule on-site equipment in order to minimize exhaust emissions from truck idling.

7. The operator shall comply with all existing and future California Air Resources Board (CARB) and SCAQMD regulations related to diesel-fueled trucks, which may include among others: (1) meeting more stringent emission standards; (2) retrofitting existing engines with particulate traps; (3) use of low sulfur fuel; and (4) use of alternative fuels or equipment.

<u>Operational Emissions</u>

Operational emissions are categorized as *area* (operational use of the project), *energy* (generation and distribution of energy to the end use), and *mobile* (vehicle trips). The operational mobile source emissions were calculated in accordance with the Trip Generation Evaluation, prepared by Urban Crossroads, July 31, 2019. The Proposed Project is anticipated to generate approximatively 208 total daily passenger vehicle trips.

The anticipated total daily trips were input into the CalEEMod Version 2016.3.2 model to estimate the operational mobile source emissions. Emissions associated with the Proposed Project's estimated vehicle trips were modeled and are listed in Table 3 and Table 4, which represent summer and winter operational emissions, respectively.

Table 3
Summer Operational Emissions
(Pounds per Day)

Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	6.7	0.4	13.0	0.0	1.7	1.7
Energy	0.0	0.2	0.1	0.0	0.0	0.0
Mobile	0.5	3.0	5.7	0.0	1.5	0.4
Totals (lbs/day)	7.2	3.6	18.7	0.1	3.2	2.1
SCAQMD Threshold	55	55	550	150	150	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod.2016.3.2 Summer Emissions.

Table 4
Winter Operational Emissions
(Pounds per Day)

Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	6.7	0.5	13.0	0.0	1.7	1.7
Energy	0.0	0.2	0.1	0.0	0.0	0.0
Mobile	0.4	3.0	5.0	0.0	1.5	0.4
Totals (lbs/day)	**7.1**	**3.7**	**18.0**	**0.0**	**3.2**	**2.1**
SCAQMD Threshold	55	55	550	150	150	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod.2016.3.2 Winter Emissions.

As shown, both summer and winter season operational emissions are below SCAQMD thresholds. Impacts are anticipated to be less than significant, and no mitigation measures would be required.

The Proposed Project does not exceed applicable SCAQMD regional thresholds either during construction or operational activities. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

c) **Less than Significant Impact.** SCAQMD has developed a methodology to assess the localized impacts of emissions from a proposed project as outlined within the Final Localized Significance Threshold (LST) Methodology report; completed in June 2003 and revised in July 2008. The use of LSTs is voluntary, to be implemented at the discretion of local public agencies acting as a lead agency pursuant to CEQA. According to SCAQMD LST methodology, LSTs would apply if the proposed project includes stationary sources or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The Proposed Project includes residential development and does not include such uses. Due to the lack of stationary source emissions, no long-term localized significant threshold analysis is warranted. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

d) **Less than Significant Impact.** The Proposed Project does not contain land uses typically associated with the emission of objectionable odors. Potential odor sources associated with the Proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities; and the temporary storage of domestic solid waste (refuse) associated with the Proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts resulting from construction activity. It should be noted that any construction odor emissions generated would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction activity. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the City of Rialto's solid waste regulations. The Proposed Project would be also required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

IV. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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 Game or US 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
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?	☐	☐	☐	☒

a) **Less than Significant with Mitigation Incorporated.** A Biological Resources Assessment, dated August 22, 2019, was completed by Jericho Systems, Inc. (See Appendix B for Report). As part of the biological assessment Jericho Systems, Inc. conducted a records search for information on species and habitat related to the Project Site as well as a field study. The database searches identified 35 sensitive species (16 plant, 16 vertebrates, 3 invertebrate) and one sensitive habitat within the Fontana USGS 7.5-minute series quadrangle. The database searches indicate that no State-and/or federally listed threatened or endangered species are documented in the immediate vicinity of the Project Site.

The Project Site is vacant and surrounded by residential development on all sides. Habitat on-site consists of invasive annual grassland that includes wild oats (*Avena Fatua)*, slim oat (*Avena barbata*), and ripgut brome (*Bromus diandrus*). Sporadic perennials exist throughout the parcels, including hairy leaved sunflower (*Helianthus annuus*). Wildlife species observed or otherwise detected on site during the surveys included: mourning dove, black phoebe (*Sayornis nigricans*), lesser goldfinch (*Spinus psaltria*), California towhee (*Melozone fusca*), house finch (*Haemorhous mexicanus*), and northern mockingbird (*Mimus polyglottos*). No burrows were found throughout the site including ground squirrel burrows or gopher holes.

The Burrowing owl (BUOW) is a small, ground-dwelling owl that is protected by the international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5) as a Species of Special Concern. In southern California, BUOW can be found in grassland, shrub steppe, and desert habitat types consisting of short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils. There was no sign of historic or current use of BUOW i.e. no BUOW pellets, feathers or whitewash, no burrows, and no ground squirrels or other fossorial animals to provide surrogate burrows. Additionally, no BUOW have been documented within a 3-mile radius of the subject parcel. Therefore, BUOW are, at the time of the report, considered absent from the site.

Nesting birds are protected under the MBTA which provides protection for nesting birds that are both residents and migrants whether they are considered sensitive by resource agencies. The site is suitable for use by raptors for foraging purposes. The Project Site and immediate surrounding areas do contain habitat suitable for nesting birds in general, including the shrubs on site. Therefore, possible significant adverse impacts have been

identified or anticipated and the following mitigation measures are required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are:

Mitigation Measure BIO-1:

To avoid impacts to nesting birds (common and special status) during the nesting season (February 1 through September 15 in southern California and specifically, April 15 through August 31 for migratory passerine birds) a qualified Avian Biologist will conduct pre-construction Nesting Bird Surveys (NBS) prior to Project-related disturbance to nestable vegetation to identify any active nests. If no active nests are found, no further action will be required.

Mitigation Measure BIO-2:

If an active nest is found, the biologist will set appropriate no-work buffers around the nest which will be based upon California Department of Fish and Wildlife (CDFW) Staff Guidance Regarding Avoidance of Impacts. Buffers zones vary based on the nesting species, its sensitivity to disturbance, nesting stage and expected types, intensity and duration of disturbance. The nests and buffer zones shall be field checked weekly by a qualified biological monitor. The approved no-work buffer zone shall be clearly marked in the field, within which no disturbance activity shall commence until the qualified biologist has determined the young birds have successfully fledged and the nest is inactive.

b, c) **No Impact.** There are no drainages on site. No aspect of the site presents any evidence of jurisdictional waters. None of the following indicators are present on site: riparian vegetation, facultative, facultative wet or obligate wet vegetation, harrow marks, sand bars shaped by water, racking, rilling, destruction of vegetation, defined bed and bank, distinct line between vegetation types, clear natural scour line, meander bars, mud cracks, staining, silt deposits, litter- organic debris. No jurisdictional waters occur on site. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

d) **No Impact.** The Project Site is in an area fragmented by existing development including paved roads and residential development. No wildlife corridors are present on-site and the Proposed Project is not expected to impede regional wildlife movement or impact wildlife corridors. Development of the Proposed Project would not result in additional significant fragmentation to habitat. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

e) **No Impact.** As identified in the City of Rialto General Plan, the City is mostly developed and the majority of local biological resources are associated with Lytle Creek Wash, located northeast of the Project Site. Additionally, some pockets of open space exist east of the former Rialto Municipal Airport, over three miles north of the Project Site. The General Plan does not identify any policy for the protection of trees. Removal of ruderal vegetation on-site would not conflict with any local policies or ordinances protecting

biological resources. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

f) **No Impact.** The Project Site is not located within the planning area of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan as identified in the CDFW California Regional Conservation Plans Map (August 2019) or in the City of Rialto General Plan. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

V. CULTURAL RECOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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, b) **Less than Significant with Mitigation Incorporated.** A Phase I Cultural Resources Investigation for the Project Site, dated August 2019, was completed by McKenna et al. (McKenna) (See Appendix C for report). Research for the study included an archaeological records check, historic land use research, Native American consultation, paleontological review, a field survey, and preparation of a report in accordance with the CEQA guideline. The archaeological records search confirmed the Project Area was not previously surveyed for cultural resources, but a minimum of 23 cultural resources investigations have been completed within one-mile radius of the Project Site. As a result of the studies, 23 cultural resources were identified within one mile of the Project Area and an additional 7 historic properties were identified on the Office of Historic Preservation (OHP) Historic Properties listing. All of the identified resources are historic archaeological sites or standing structures. It is also noted that the site identified as San Bernardino County Museum (36-015135) is nowhere near the area of the Project Site.

In summary, and based on the archaeological records search data, review of aerial photographs and historic maps, and the paleontological overview, McKenna confirmed it is unlikely archaeological resources will be present. The field survey yielded no evidence of prehistoric or historic archaeological resources, nor evidence of any structural remains with the property. The property is, however, is associated with long-term, historic

ownership, and therefore, McKenna prepared a set of DPR-523 forms documenting the property. The documentation emphasizes the property is not a significant historical resource and its recordation is not intended to suggest any significance. It is merely a tool for identifying a property that has a recordable history.

Based on McKenna's research, field investigations, and documentation, the cultural resources investigation concluded that the Project Site is not culturally significant and the proposed development would not result in any adverse environmental impacts. However, the possibility of uncovering an unanticipated find remains. Therefore, possible significant adverse impacts have been identified or anticipated and the following mitigation measures are required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are:

Mitigation Measure CR-1:

The Project Proponent shall have a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983), on-call to assess any archaeological resources that may be uncovered. The archaeological consultant shall be permitted to examine the find and make recommendation in accordance to professional practices and, if deemed necessary, recommend the initiation of an archaeological monitoring program.

c) **Less than Significant with Mitigation Incorporated.** Construction activities, particularly grading, could potentially disturb human remains interred outside of a formal cemetery. Thus, the potential exists that human remains may be unearthed during grading and excavation activities associated with project construction. Therefore, possible significant adverse impacts have been identified or anticipated and the following mitigation measures are required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are:

Mitigation Measure CR-2:

Should human remains and/or cremations be encountered during any earthmoving activities, all work shall stop immediately in the area in which the find(s) are present (suggested 50-foot radius area around the remains and project personnel will be excluded from the area and no photographs will be permitted), and the County of San Bernardino Coroner will be notified. The City of Rialto and the Project Proponent shall also be called and informed of the discovery. The Coroner will determine if the bones are historic/archaeological or a modern legal case. The Coroner will immediately contact the Native American Heritage Commission (NAHC) in the event that remains are determined to be human and of Native American origin, in accordance with California Public Resources Code Section 5097.98.

All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the State of California regardless if the remains are modern or archaeological.

VI. ENERGY

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

a) **Less than Significant Impact.**

Electricity

Southern California Edison (SCE) provides electricity to the Proposed Project Site. Currently, the existing Project Site is vacant and does not use electricity. Therefore, development of the Proposed Project would cause a permanent increase in demand for electricity when compared to existing conditions. The increased demand is expected to be sufficiently served by the existing SCE electrical facilities. Total electricity demand in SCE's service area is estimated to increase by approximately 12,000 Gigawatt hours (GWh)— between the years 2015 and 2026.

According to the California Energy Commission's Energy Report Generator for the San Bernardino County Planning Area, Residential Sector for the year 2018, the Residential Sector was responsible for 5,443.731723 GWh of electricity consumption in the San Bernardino County Planning Area. The Proposed Project is estimated to annually consume 0.191763 GWh. The Proposed Project's estimated annual electricity consumption compared to the 2018 annual electricity consumption of the overall Residential Sector in the San Bernardino County Planning Area would account for approximately 0.0035 percent of total electricity consumption. Most electrical use at the Proposed Project will be for lighting. The increase in electricity demand from the Proposed Project would therefore represent an insignificant percent of the overall demand in the San Bernardino County

planning area. The Proposed Project's electrical demand is not expected to significantly impact SCE's level of service.

The Proposed Project has been designed to comply with the 2019 Building Energy Efficiency Standards. The City of Rialto would review and verify that the Proposed Project plans would comply with the most current version of the Building and Energy Efficiency Standards. Prior to the issuance of building permits, the City would also require plans to adhere to CALGreen, which establishes planning and design standards for sustainable developments, and energy efficiency. These sustainable features would be incorporated into the Proposed Project and may include high energy efficiency insulation, wall assemblies and windows to maximize insulation of cool or warm temperature; cool roof concrete roof tiles; radiant barrier roof sheathing; energy efficiency heating and cooling systems; and solar panels. The development of the Proposed Project is not anticipated to conflict with achievement of the 60 percent Renewable Portfolio Standard established in in the current SB 100. SCE and other electricity retailer's SB 100 goals include that end-user electricity use such as residential and commercial developments use would decrease from current emission estimates. The Proposed Project would not result in a significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation and no mitigation measures are recommended.

Natural Gas

The Proposed Project and surrounding area are serviced by Southern California Gas Company (SoCalGas). The Project Site is currently vacant and has no demand on natural gas. Therefore, the development of the Proposed Project will create a permanent increase demand of natural gas. However, the existing SoCalGas facilities is expected to meet the increased demand of natural gas. The residential demand of natural gas is anticipated to decrease at an annual average rate of 1.4 percent. According to the California Energy Commission's Energy Report Generator for San Bernardino County Planning Area, Residential Sector from the year 2018, the Residential Sector was responsible for 231.468146 million Therms of natural gas consumption in the San Bernardino County Planning Area. The Proposed Project is estimated to annually consume 0.00673115 million Therms. The Proposed Project's estimated annual natural gas consumption compared to the 2018 annual natural gas consumption of the overall Residential Sector in the San Bernardino County Planning Area would account for approximately 0.0029 percent of total natural gas consumption. Therefore, the natural gas demand from the Proposed Project would represent an insignificant percentage to the overall demand in San Bernardino County Planning Area. The Proposed Project would not result in a significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b) **Less than Significant Impact.** Project design and operation would be required to comply with the County of San Bernardino Greenhouse Gas Emissions Reduction Plan and the State Building Energy Efficiency Standards related to appliance efficiency regulations, and

green building standards. Project development would not cause inefficient, wasteful and unnecessary energy consumption, and no adverse impact would occur.

The Proposed Project is required to adhere to the County of San Bernardino: Greenhouse Gas Emissions Reduction Plan and Title 24 order to help decrease energy consumption and GHG emissions to become a more sustainable community and to meet the goals of AB 32. The Proposed Project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce GHG emissions, including Title 24, AB 32, and SB 32; therefore, the Project is consistent with AB 32, which aims to decrease emissions statewide to 1990 levels by to 2020. The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

VII. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the California 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)

i) **Less than Significant Impact.** The Project Site is located in seismically active southern California with numerous fault systems in the region. However, as stated in the Geotechnical Investigation, dated August 2, 2019, performed by Professional Engineers Consulting, Inc., (See Appendix D for report), the Project Site lies outside of any Alquist Priolo Special Studies Zone and the potential for damage due to direct fault rupture is considered very remote. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

ii) **Less than Significant Impact.** The Project Site is located in an area characterized as moderately sensitive to seismicity and the San Jacinto fault is located approximately 1.24 miles from the Project Site. Ground shaking originating from earthquakes along other active faults in the region is expected to induce lower horizontal accelerations due to smaller anticipated earthquakes and/or greater distances to other faults. The proposed development shall meet all requirements of the City Building Ordinance and will not impose any adverse effect on proposed or existing adjacent structures. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

iii) **Less than Significant with Mitigation Incorporated.** Liquefaction is a phenomenon in which cohesion-less, saturated, fine-grained sand and silt soils loose shear strength due to ground shaking. The Project Site is expected to experience ground shaking and earthquake activity that is typical of the southern California area. It is during severe ground shaking that loose, granular soils below the groundwater table can liquefy. The potential for liquefaction at the Project Site is considered to be very low. Thus, the design of the proposed development in conformance with the latest Building Code provisions for earthquake design is expected to provide mitigation of ground shaking hazards that are typical to

southern California. Furthermore, development of the Project Site would take place in accordance with the applicable requirements listed in the California Building Standards Code and the Buildings and construction requirements of the City of Rialto Municipal Code. Seismic settlement of sandy soils during moderate seismic events could not be precluded. The Project Site is considered to be in a very low liquefaction zone according to Exhibit 5.1 of the City of Rialto General Plan and the San Bernardino County Land Use Plan for Generalized Liquefaction Susceptibility. Possible significant adverse impacts have been identified or anticipated and the following mitigation measure is required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measure is:

Mitigation Measure GEO-1:

All recommendations contained within the Preliminary Soil Investigation Report prepared by Soil Exploration Company, Inc. and as approved by the City Engineer as part of the plan review process shall be implemented prior to issuance of a grading permit.

iv) **No Impact.** The Project Site is relatively level descending gradually from north to south on the order of a few feet. As identified in the County of San Bernardino General Plan Geologic Hazard Overlay Map FH29B Rialto, the Project Site is not located in an area likely to become unstable as a result of on- or off-site landslide. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

b) **Less than Significant Impact.** During the development of the Project Site, which would include disturbance of approximately 3.17 acres, project-related dust may be generated due to the operation of machinery on-site or due to high winds. Additionally, erosion of soils could occur due to a storm event. Development of the Proposed Project would disturb more than one acre of soil; therefore, the Proposed Project is subject to the requirements of the State Water Resources Control Board General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation. The Construction General Permit requires the development and implementation of a Storm Water Pollution and Prevention Plan (SWPPP). The SWPPP must list Best Management Practices (BMPs) to avoid and minimize soil erosion. Adherence to BMPs is anticipated to ensure that the Proposed Project does not result in substantial soil erosion or the loss of topsoil. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

c) **Less than Significant Impact.** The Project Site is relatively flat with no prominent geologic features occurring on or within the vicinity of the Project Site. Review of the County of San Bernardino General Plan Geologic Hazard Overlay Map FH29B Rialto showed that the Project Site is not located in an area likely to become unstable as a result of on- or off-site landslide. According to the Geotechnical Engineering Investigation

prepared for the Proposed Project, the Project Site is located within an area with no potential for landslides, and development on the subject property would not be exposed to risk of landslide. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

d) **No Impact.** Expansive soils are fine-grained silts and clays which are subject to swelling and contracting. The amount of this swelling and contracting is subject to the amount of fine-grained clay materials present in the soils and the amount moisture either introduced or extracted from the soils. Expansive soils are divided into five categories ranging from "very low" to "very high." If the expansion index of the soils on-site is 21 or higher, the soils are considered to be expansive. The classifications of expansive soils are as follows:

Expansion Index	Potential Expansion
0 – 20	Very Low
21 – 50	Low
51 – 90	Medium
91 – 130	High
Above 130	Very High

Table II, Expansion Index Tests, of the Geotechnical Engineering Investigation, describes the soils on-site as silty sand with an expansion index of zero. The potential expansion of the soil on-site is considered to be very low. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

e) **No Impact.** The Proposed Project would connect to the existing sewer system. No septic tanks or alternative wastewater disposal is proposed. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

f) **Less Than Significant With Mitigation Incorporated.** As discussed in Section V of this document, a Phase I Cultural Resources Investigation was completed for the Project Site, dated August 2019, by McKenna et al., that concluded the project area was not previously surveyed for archaeological or paleontological resources. Appendix D of the report is a Paleontological Overview Prepared by Samuel A. McLeod, Ph.D., of the Natural History Museum of Los Angeles County on August 5, 2019. The letter report indicates that McLeod completed paleontological overviews of the project area and a nearby project site. He concluded that there were no known fossil localities within the project area boundaries but known fossil localities occur nearby in sedimentary deposits similar to those that occur in the proposed project area, either at surface or depth. All or almost all of the proposed project area has surficial sediments composed of younger Quaternary Alluvium, with possibly surficial deposits of older Quaternary Alluvium along the eastern border, both derived broadly as alluvial fan deposits from the San Gabriel Mountains to the north. In this vicinity these deposits typically do not contain significant vertebrate fossils in the uppermost layers, but they may be underlain at relatively shallow depth by older sedimentary deposits that do contain significant fossil vertebrate remains.

Grading and shallow excavations in the uppermost layers of soil and Quaternary Alluvium in the proposed project area are unlikely to encounter significant fossil vertebrate remains. Deeper excavations that extend down into older Quaternary sediments, however, may well encounter significant vertebrate fossils. Therefore, possible significant adverse impacts have been identified or anticipated and the following mitigation measure is required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are:

Mitigation Measure GEO-2:

The Project Proponent shall have a qualified paleontologist on-call to assess any fossil (paleontological) specimens that may be uncovered during earth-moving activities within the project area. If grading and excavations occur below 5 feet or if fossil specimens are identified, the remainder of earthmoving activities shall be subject to paleontological monitoring by a qualified paleontologist. The paleontological monitoring must be planned and conducted in a manner consistent and compliant with the policies and guidelines of the San Bernardino County Museum, Redlands. Should paleontologist resources be identified, the paleontological consultant shall be permitted to examine the find and make recommendation in accordance to professional practices and, if deemed necessary, recommend the initiation of a paleontological monitoring program.

VIII. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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 purposes of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a) **Less than Significant Impact.** Emissions were estimated using the CalEEMod version 2016.3.2. Parameters used to estimate construction emissions, such as the worker and vendor trips and trip lengths, utilized the CalEEMod defaults for single family residential land uses. Operational emissions are categorized as area (operational use of the project), energy (generation and distribution of energy to the end use), mobile (vehicle trips), waste (landfill), and water. The operational mobile source emissions were calculated in accordance with the total daily trips presented in the Trip Generation Evaluation prepared for the Proposed Project by Urban Crossroads dated July 2019. The Proposed Project is anticipated to generate approximatively 208 total daily trips.

Many gases make up the group of pollutants that contribute to global climate change, however, three gases are currently evaluated and represent the highest concertation of GHG: Carbon dioxide (CO_2), Methane (CH_4), and Nitrous oxide (N_2O). SCAQMD provides guidance methods and/or Emission Factors that are used for evaluating a project's emissions in relation to the thresholds. A threshold of 3,000 $MTCO_2E$ per year has been adopted by SCAQMD for all non-industrial uses. The modeled emissions anticipated from the Proposed Project compared to the SCAQMD threshold are shown below in Table 5 and Table 6.

Table 5
Greenhouse Gas Construction Emissions
(Metric Tons per Year)

Source/Phase	CO_2	CH_4	N_20
Site Preparation	8.4	0.0	0.0
Grading	10.4	0.0	0.0
Building Construction	102.0	0.0	0.0
Paving	14.7	0.0	0.0
Architectural Coating	2.3	0.0	0.0
Total MTCO2e	**137.8**		
SCAQMD Threshold	3,000		
Significant	**No**		

Source: CalEEMod.2016.3.2 Annual Emissions.

Table 6
Greenhouse Gas Operational Emissions
(Metric Tons per Year)

Source/Phase	CO_2	CH_4	N_20
Area	7.2	0.0	0.0
Energy	97.0	0.0	0.0
Mobile	333.0	0.0	0.0
Waste	5.2	0.3	0.0
Water	9.6	0.0	0.0
Total MTCO2e	**452.3**		
SCAQMD Threshold	3,000		
Significant	**No**		

Source: CalEEMod.2016.3.2 Annual Emissions.

As shown in Table 5 and Table 6, the Proposed Project's emissions would not exceed the SCAQMD's 3,000 $MTCO_2e$ threshold of significance. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b) **Less than Significant Impact.** There are no existing GHG plans, policies, or regulations that have been adopted by CARB or SCAQMD that would apply to this type of emissions source. However, the contractor would be required to comply with CARB and SCAQMD regulations related to diesel-fueled trucks, which may include among others: 1) meeting

more stringent emission standards; (2) retrofitting existing engines with particulate traps; (3) use of low sulfur fuel; and (4) use of alternative fuels or equipment.

It is possible that CARB may develop performance standards for project-related activities prior to construction of the Proposed Project. In this event, these performance standards would be implemented and adhered to, and there would be no conflict with any applicable plan, policy, or regulations. The Proposed Project is consistent with CARB scoping measures and therefore does not conflict with local or regional greenhouse gas plans. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

a) **No Impact.** Post-construction activities of the proposed residential development would not require the routine transport or use of hazardous materials. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

b) **Less than Significant Impact.** Hazardous or toxic materials transported in association with construction of the Project may include items such as oils, paints, and fuels. All materials required during construction would be kept in compliance with State and local regulations. Post-construction activities would include standard maintenance (i.e., landscape upkeep, exterior painting and similar activities) involving the use of commercially available products (e.g., pesticides, herbicides, gas, oil, paint, etc.) the use of which would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental release of hazardous materials into the environment. With implementation of Best Management Practices (BMPs) and compliance with all applicable regulations, potential impacts from the use of hazardous materials is considered less than significant. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

c) **Less Than Significant Impact**. Although the proposed residential development occurs within 0.25-mile of a school, no hazardous materials would be emitted as a result of the construction of the residential units. The storage and use of hazardous materials are not associated with single-family homes; therefore, no impacts associated with emission of hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of a school are anticipated. Therefore, no significant adverse impacts or anticipated and no mitigation measures are required.

d) **Less than Significant Impact.** The Project Site is not a known hazardous material site as identified in Exhibit 5.4 of the City of Rialto General Plan. The Project Site is not included on a list of hazardous material sites as compiled pursuant to Government Code Section 65962.5 as reported in the Department of Toxic Substances Control EnviroStor database (February 6, 2020). In the event that hazardous materials are identified on the Project Site during construction, standard reporting and remediation regulations would apply. Therefore, no significant adverse impacts or anticipated, and no mitigation measures are required.

e) **No Impact.** The Project Site is located approximately 3.38-miles south of the former Rialto Municipal Airport runway. The airport was officially closed in September 2014. Airport operations are no longer supported. There are no private airfields or airstrips in the vicinity of the Project Site. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

f) **No Impact.** The Project Site does not contain any emergency facilities nor does Cedar Avenue serve as an emergency evacuation route. During construction the contractor would

be required to maintain adequate emergency access for emergency vehicles as required by the City. Post construction activities at the site would not interfere with an adopted emergency response or evacuation plan. Access provided via Cedar Avenue would be maintained for ingress/egress at all times. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

g) **No Impact.** As shown in Exhibit 5.3 of the City of Rialto General Plan, the Project Site is not identified in an area of wildland fire risks. The Project Site is located in a largely developed area and no wildlands are located on or adjacent to the Project Site. The Proposed Project would not expose people or structures to significant risk or loss, injury, or death involving wildland fires. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

X. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially 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 stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or substantial groundwater management plan?	☐	☐	☒	☐

a) **Less than Significant Impact.** The Proposed Project would disturb 3.17 acres and is therefore subject to the National Pollution Discharge Elimination System (NPDES) permit requirements. The State of California is authorized to administer various aspects of the NPDES.

Construction activities covered under the State's General Construction permit include removal of vegetation, grading, excavating, or any other activities that causes the disturbance to one acre or more. The General Construction permit requires recipients to reduce or eliminate non-storm water discharges into stormwater systems, and to develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The purpose of the SWPPP is to: 1) identify pollutant sources that may affect the quality of discharges of stormwater associated with construction activities; and 2) identify, construct, and implement stormwater pollution control measures to reduce pollutants in stormwater discharges from the construction site during and after construction.

The NPDES also requires a Water Quality Management Plan (WQMP). A Preliminary WQMP for the Proposed Project has been submitted for review and approval by the City of Rialto. The WQMP was prepared to meet NPDES Area Wide Stormwater Program requirements. Mandatory compliance with the Proposed Project's WQMP as approved by the City, in addition to compliance with NPDES Permit requirements, would ensure that all potential pollutants of concern are minimized or otherwise appropriately treated prior to being discharged from the Project Site. Implementation of the Proposed Project would not violate any water quality standards or waste discharge requirements. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b) **Less Than Significant Impact.** Nearly all of Rialto's water sources come from local surface water and groundwater supplies. Nearly two-thirds of the City's potable water comes from the groundwater basins directly beneath Rialto as stated in the City of Rialto 2010 Urban Water Management Plan (UWMP). Water is pumped from many wells that tap into the Lytle, Rialto, Bunkerhill, and North Riverside aquifers. The Project Site is within the service area of the West Valley Water District (WVWD), as shown on Exhibit 3.2 of the City's General Plan. The San Bernardino Valley Municipal Water District (SBVMWD) also provides the City with water. The SBVMWD prepared a Regional UWMP that provides a supply reliability analysis for all agencies within its service area, including the City of Rialto. Currently, the SBVMWD's available groundwater supply is

approximately 49,460 acre-feet per year or 16.1 billion gallons per year. SBVMWD is also responsible for long-range water supply management, including importing supplemental water, and is responsible for storage management of most of the groundwater basins within its boundaries and for groundwater extraction. Shown below in Table 7 is a comparison of regional water supplies and demands for the entire SBVMWD service area (including the City of Rialto) during a multiple-dry year period as provided in the 2015 San Bernardino Valley Regional UWMP, updated in 2017. The multiple-dry year period is generally the lowest annual runoff for a three-year or more consecutive period.

Table 7
Water Supply and Demand During Multiple-Dry Year Period
San Bernardino Valley

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	327,444	335,034	342,227	349,455	356,283
	Demand Totals	251,247	262,042	272,882	284,495	293,105
	Difference (Supply minus Demand)	76,196	72,992	69,345	64,960	63,178
Second Year	Supply Totals	327,444	335,034	342,227	349,455	356,283
	Demand Totals	247,360	257,774	268,112	279,205	287,450
	Difference (Supply minus Demand)	80,083	77,260	74,115	70,250	68,833
Third Year	Supply Totals	327,444	335,034	342,227	349,455	356,283
	Demand Totals	241,881	251,870	261,662	272,191	280,072
	Difference (Supply minus Demand)	85,562	83,163	80,564	77,264	76,211

The table shows adequate regional supplies for the years 2020 to 2040 under multiple-dry year conditions. The Proposed Project does not include groundwater wells that would impact the production rate of any nearby pre-existing wells. Additionally, the Proposed Project includes a water detention/water quality basin that will allow for continued groundwater recharge. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

c)

i) **Less than Significant Impact.** Erosion is the process by which material is removed from the Earth's surface most commonly by wind or water. Erosion is more likely if soils are left unprotected. The Proposed Project would include 22 detached single-family homes and hardscaping and landscaping. During development of the Proposed Project, project-related dust may be generated due to the operation of machinery on-site or due to high winds. Additionally, erosion of soils could occur due to a storm event. As discussed in Section VII (question b) of this document, the Proposed Project is subject to Best Management Practices (BMPs) established in an SWPPP to ensure that the Proposed Project does not result in substantial soil erosion or the loss of topsoil. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

ii-iv) **Less than Significant Impact.** A Preliminary Hydrology and Hydraulics Study, dated February 2020, was prepared by G&G Engineering, Inc. (See Appendix E for report), and a WQMP in February 2020 (See Appendix F for report). As described

in the Hydrology Study, the watershed is divided into two subareas; namely Subarea 1 and Subarea 2. In the post development stage, the watershed is also divided into two subareas. Stormwater from Subarea 1 and 2 will be collected into catch basins and diverted into MC-4500 Storm Chambers (47 units). During storm events exceeding more 85th Percentile rain, storm water will overflow from the catch basins through underground piping and co-mingle prior to discharging through parkway culverts on to street gutters. The Hydrology Study also concluded that the proposed on-site development creates a decrease in the downstream runoff.

The Project Site is located in FEMA Flood Zone X and is shown on FEMA Map No. 06071C8659H, dated August 28, 2008. FEMA defines Zone X as an area of minimal flood hazard. Lytle Creek, located in northern Rialto, is vulnerable to inundation from 100-year flood events. The Project Site is approximately 6 miles south of Lytle Creek, making impacts of possible flooding to the Project Site from Lytle Creek very unlikely. The Project Site, as shown on Exhibit 5.2 of the City's General Plan, is located outside the 100 and 500-year floodplains and is over five miles south of the creek. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

d) **No Impact.** Seiches are standing waves generated in enclosed bodies of water in response to ground shaking. The Project Site is not located in the immediate vicinity of a known large body of water or water storage facility and therefore impacts from potential seiches are not anticipated. Tsunamis are large waves generated in open bodies of water by fault displacement of major ground movement. Due to the inland location of the Project Site, tsunamis are not considered to be a risk. Dams or other water-retaining structures may fail as a result of large earthquakes, resulting in flooding and mudflow production. The Project Site is not located within a 100-year FEMA Flood Zone Area and there are no dams or reservoirs near the Project Site. The Proposed Project is not anticipated to risk release of pollutants due to project inundation. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

e) **Less than Significant Impact.** Mandatory compliance with the Proposed Project's WQMP, in addition to compliance with NPDES Permit requirements, would ensure that the Proposed Project does not conflict with or obstruct implementation of a water quality control plan. As discussed in item X(b) above, the Proposed Project would not exceed the available supply of water or obstruct with implementation of a substantial groundwater management plan. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XI. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Physically divide an established community?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
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, b) **Less than Significant Impact.** The Proposed Project is the development of 22 single-family residential units in the City of Rialto on an approximately 3.17-acre vacant land. The surrounding land uses to the north, south, east and west are single-family residential. A General Plan Amendment (GPA) is proposed to allow for the higher density of the Proposed Project compared to the current allowed density for the Project Site. The proposed land use designation would change the current land use from R6 (Residential 6) to R12 (Residential 12). The overall net density of the proposed land use designation change to R12, inclusive of shared open space, shall not exceed 12 units per acre as compared to the current land use designation of R6, which shall not exceed 6 units per acre. The current land use designation at the Project Site would allow 19 total units for the 3.17-acre site. The GPA land use designation would allow 38 total units for the Project Site. However, only 22 single-family residential units are proposed for development, which would result in a 15 percent increase in the current allowable amount of units, or three additional units.

The Application also requests a Zone Change (ZC) for the Project Site which is currently zoned as Single Family Residential (R-1C), to Multiple Family Zone (R-3). The R-3 zone will allow for the development of small-lot (e.g. 2,000 square-feet) single-family residences. Upon approval of the GPA and ZC, the Proposed Project would be consistent with City plans and the surrounding land uses, and would not divide an existing community, or conflict with local land use policies, regulations, or with existing zoning. The character of the proposed single-family residences is in keeping with the surrounding single-family residential character of the surrounding area. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XII. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	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, b) **No Impact.** The Project Site is in an area identified as Mineral Resource Zone-2 (MRZ-2), known to have "significant mineral deposits that are present or there is a high likelihood for their presence" as shown on Exhibit 2.6 of the City's General Plan. Since the Project Site is vacant with no previous development, construction activities would not interfere with any unknown deposits. Also, the vicinity of the Project Site is completely developed with residential uses and the site itself occurs in a land use designation incompatible with the extraction of minerals.

According to the City of Rialto General Plan, most designated aggregate resources occur in the northern part of the City. Two significant aggregate mining operations located within Lytle Creek and north of SR-210 along Alder Avenue have a land use designation of Open Space to protect aggregate resources as long as mining activity is feasible. The Project Site is not located on or near these known aggregate resources. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

XIII. NOISE

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

a, b) **Less than Significant Impact.** A Construction Noise Analysis, dated July 23, 2020, was completed by Urban Crossroads, Inc. (See Appendix G for report). The purpose of the noise analysis is to assess the potential construction noise levels and demonstrate that the Proposed Project satisfies the City of Rialto construction noise criteria at nearby noise sensitive receiver locations. Sensitive uses or receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Receivers represent a location of noise sensitive areas and are used to estimate the construction noise level impacts. To describe the potential off-site construction noise level impacts from the Proposed Project, 16 sensitive receiver locations in the vicinity of the Project Site were identified, including the closest sensitive residential receiver located at 1162 Church Avenue approximately 12 feet east of the Project Site.

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at nearby noise sensitive residential receivers surrounding the Project Site. To analyze noise impacts originating from the construction of the Proposed Project, noise from construction activities are typically limited to the hours of operation established

under the City's Municipal Code. The Rialto Municipal Code, Section 9.50.070, states that construction activities are permitted between the hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1st to April 30th, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1st to September 30th, and 8:00 a.m. to 5:00 p.m. on Saturdays any time of year; with no activity allowed on Sundays or state holidays.

While the City establishes limits to the hours during which construction activity may take place, neither the General Plan nor the Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers. To evaluate whether the Proposed Project will generate potentially significant construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual.* The FTA manual provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use.

Noise generated by the project construction equipment would include a combination of dozers, graders, scrapers, trucks, power tools, concrete mixers, and portable generators. The construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc., to describe the typical construction activity noise levels for each stage of project construction. The reference noise level measurements represent worst-case construction equipment activities since they account for only those noise levels measured during actual activity of each piece(s) of equipment. The construction activities would occur throughout the day at varying degrees of intensity and at different locations on the Project Site.

The analysis shows that the Project-related short-term construction noise levels ranging from 72.7 to 78.9 dBA L_{eq} will satisfy the 80 dBA L_{eq} thresholds at all receiver locations. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XIV. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

a, b) **Less than Significant Impact.** Construction activities at the site would be short-term and are anticipated to draw employees from the existing pool of construction labor in the region. The Proposed Project includes the development of 22 detached single-family homes, a Zone Change (ZC) from R-1C to R-3 and General Plan Amendment (GPA) from R6 to R12. The General Plan Amendment for R12 would allow for 23-46 persons per acre which would result in a maximum of 146 additional residents as compared to the current land use designation at the Project Site of R6, which would result in a maximum of 73 additional residents within an existing residential area of the City. Therefore, the proposed 22 units would anticipate a maximum of 85 additional residents to the City of Rialto. This would result in a 15 percent increase of the current General Plan's anticipated population growth at the Project Site. The Proposed Project would not induce substantial unplanned population growth in an area, or result in the need for extension of roads or other infrastructure.

Implementation of the Proposed Project would not displace any existing residents or houses since the Project Site is vacant. There are no public services or utilities that would require extension to serve the Proposed Project. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XV. PUBLIC SERVICES

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

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Other Public Facilities?	☐	☐	☒	☐

a)

Fire Protection

Less than Significant Impact. Fire emergency response at the Project Site would be provided by the City of Rialto Fire Department. The Rialto Fire Department is an all-risk fire agency; services include fire suppression, emergency medical, technical rescue, hazardous material, and other related emergency services. Firefighting resources in Rialto include four fire stations: emergency response personnel, firefighters/paramedics, and a Hazardous Materials Response Team. The closest City of Rialto Fire Station to the Project Site is Rialto Fire Department Station 201 located at 131 S. Willow Avenue. However, Rialto Fire Department Station 205, located at 1485 S. Willow Avenue will be the closest fire station upon completion of its construction. The Proposed Project is required to provide a minimum of fire safety and support fire suppression activities, including type and building construction, fire sprinklers, and paved fire access. Furthermore, the Proposed Project is subject to development impact fees for continued efficient fire protection. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

Police Protection

Less than Significant Impact. The Project Site is located in the service area of the Rialto Police Department. The Rialto Police Department Station is located at 128 S. Willow Avenue, approximately 1.85 miles northeast of the Project Site. The Rialto Police Department provides a full range of law enforcement and community programs. The Proposed Project is subject to development impact fees for continued efficient police protection. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

Schools

Less than Significant Impact. Residents of the City of Rialto are served by three school districts: Rialto Unified School District (RUSD); Fontana Unified School District (FUSD); and Colton Joint Unified School District (CJUSD). CJUSD serves a small portion of southern Rialto and Bloomington, including the Project Site. The following public schools provide educational services to the project area: Gerald A Smith Elementary School (9551 Linden Avenue), Joe Baca Middle School (1640 South Lilac Avenue), and Grand Terrace High School (21810 Main Street).

There are currently 22,014 students enrolled in the school district as shown on the California Department of Education District Profile for CJUSD. The CJUSD Student Generation Factors, Student per Residential Unit Table from the San Bernardino County-Countywide Plan EIR classifies two factors: single-family units and multi-family units.

Based on these units, classifications the Student Generation Factor Rate (SGR) for the Proposed Project would be 0.7225. The Proposed Project would therefore be anticipated to generate approximately 16 students. With the collection of development impact fees, impacts related to school facilities are expected to be less than significant. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

Parks

Less than Significant Impact. As a rule of thumb, many cities throughout California use three to five acres of parkland per 1,000 residents as a benchmark for sufficient park space. The Rialto City Council has adopted a standard of three acres per 1,000 residents and uses this ratio for park dedication/fees requirements. The Proposed Project includes a "Tot Lot" open space area for the project's residents that would be approximately 9,051 square feet which exceeds the Open Space requirement (8,800 square feet) for the proposed development. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

Other Public Facilities

Less than Significant Impact. The Proposed Project is not expected to result in a demand for other public facilities/services, such as libraries, community recreation centers, and/or animal shelter. Implementation of the Proposed Project would not adversely affect other public facilities or require the construction of new or modified facilities. Therefore, no significant adverse impacts are identified or are anticipated, and no mitigation measures are required.

XVI. RECREATION

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

a, b) **Less Than Significant Impact.** The City adopted the park standard is three acres per 1,000 residents. The General Plan states that the City does not meet the ratio of three acres per 1,000 residents and has a moderate shortage of parks space to serve its population. The Proposed Project is estimated to increase the City of Rialto's population by approximately

85 residents. The maximum allowable population increase for the R12 land use designation is approximately 146 residents which would increase the need for parks by 0.2 acres. However, the Proposed Project includes an approximately 0.21-acre open space area for use by the gated community residents. The City of Rialto consists of nine city parks in addition to recreation facilities for public use.

Currently, the City of Rialto is expanding Frisbie Park located at 1901 N. Acacia Ave. Expansion of this park includes approval to procure two prefabricated masonry buildings to support the Frisbie Park Expansion project. These two buildings consist of a new restroom/storage building and new concessions, an office, storage, a meeting facility building, and will replace one outdated, under-sized and non-ADA compliant combined facilities building, which currently serves the Rialto Softball League. Additionally, the City of Rialto approved the construction of Joe Sampson park, located at 650 W. Randall Avenue and includes a tot lot play area, a child lot play area, exercise equipment, bike racks, half-court basketball courts and other amenities across 8 acres.

The implementation of an on-site 0.21-acre open space area as well as the City's collection of developer impact fees would ensure impacts to recreational facilities are less than significant. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XVII. TRANSPORATION

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Conflict with a plan, ordinance or policy addressing circulation system, including transit, roadways, bicycle lanes and pedestrian paths?	☐	☐	☒	☐
b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?	☐	☐	☒	☐
c) For a transportation project, would the project conflict or be consistent with CEQA Guidelines section 15064.3, subdivision (b)(2)?	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐

a) **Less than Significant Impact.** A Trip Generation Evaluation, dated July 31, 2019, was completed by Urban Crossroads (See Appendix H for report). A trip generation evaluation represents the amount of traffic which is both attracted to and produced by a development. The trip generation rates used for this Project were based upon the Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition (2017) trip generation rates. The ITE Single Family Detached Residential land use (ITE Land Use Code 210) was utilized for the Proposed Project. The Proposed Project is anticipated to generate 208 trip ends per day with 16 AM peak hour trips and 22 PM peak hour trips. Pursuant to the County of San Bernardino's Transportation Impact Guidelines (July 9, 2019), additional traffic analysis was not necessary as the Proposed Project is anticipated to generate less than 50 peak hour trips. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b, c) **Less than Significant Impact.** The Proposed Project is identified as a land use project, that would result in a less than significant transportation impact because it occurs within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor. The Project Site is located less than 0.15 miles north of an existing Omnitrans bus stop at San Bernardino Avenue and Cedar Avenue. Implementation of the Proposed Project would not substantially increase vehicle miles traveled based on its proximity to an existing major transit stop. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

d, e) **Less than Significant Impact.** Final Project Site plans would be subject to City review and approval to ensure that the Proposed Project would not create substantial hazards due to a design feature or incompatible uses. The Project Site proposes one full-access ingress/egress at Cedar Avenue. The Site Plan design is not expected to cause a substantial increase in hazards or provide inadequate emergency access. Plans will be subject to review and approval by the City Fire and Police Departments. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XVIII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
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, b) **Less than Significant with Mitigation Incorporated.** As mentioned in Section V of this document, a Phase I Cultural Resources Investigation for the Project Site, dated August 2019, was completed by McKenna et al. (McKenna) (See Appendix C for report). The report included determination of Native American tribal cultural resources that may exist on or near the Project Site as a requirement of the CEQA Appendix G Guidelines.

California Assembly Bill 52 (AB52) was approved by Governor Brown on September 25, 2014. AB52 specifies that CEQA projects with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment. As such, the bill requires lead agency consultation with California Native American tribes traditionally and culturally affiliated with the geographic area of a proposed project, if the tribe requested to the lead agency, in writing, to be informed of proposed projects in that geographic area. The legislation further requires that the tribe-requested consultation be completed prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

The project area is generally associated with the Southern California Coastal desert region of the westernmost Sonoran Desert. This area is culturally associated with Native American identified as Serrano or Vanyume. The Serrano claim the San Gabriel and San Bernardino Mountain areas and associated foothill areas as traditional territory. The Vanyume are generally associated with the areas of the desert floor in the Mojave Desert.

McKenna contacted the Native American Heritage Commission and they responded by providing a listing of local Native American representatives wishing to be informed of projects within the ancestral territories. McKenna mailed the project description and records search results to these individuals and referred them to the City of Rialto for formal consultation. The City of Rialto mailed notices to the following six tribes on December 19, 2019:

- San Manuel band of Mission Indians-Lynn Valbueno, Chairwoman
- Morongo Band of Mission Indians-Robert martin, Chairperson
- Gabrieleño-Tongva San Gabriel Band of Mission Indians-Anthony Morales, Chairperson
- Gabrieleño-Tongva Nation-Sandonne Goad, Chairperson

- Gabrieleño-Tongva Nation-Sam Dunlap, Cultural Resources Director
- Gabrieleño Band of Mission Indians-Kizh Nation-Andrew Salas, Chairperson

The Gabrieleño Band of Mission Indians-Kizh Nation responded in January 2020, with mitigation measures to ensure potential impacts to Tribal Cultural Resources are reduced to a less than significant level. The following mitigation measures shall be made a part of Project Conditions of Approval:

Gabrieleño Band of Mission Indians-Kizh Nation

Mitigation Measure TCR-1:

Retain a Native American Monitor/Consultant:
The Project Applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources.

Mitigation Measure TCR-2:

Unanticipated Discovery of Tribal Cultural and Archaeological Resources:
Upon discovery of any tribal cultural or archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be assessed. All tribal, cultural, and archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request preservation in place or recovery for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, additional protective mitigation takes place (CEQA Guidelines Section15064.5 [f]). If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource", time allotment and funding sufficient to allow

for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources.

Mitigation Measure TCR-3:

Public Resources Code Sections 21083.2(b) for unique archaeological resources: *Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. All Tribal Cultural Resources shall be returned to the Tribe. Any historic archaeological material that is not Native American in origin shall be curated at a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to the Tribe or a local school or historical society in the area for educational purposes.*

Mitigation Measure TCR-4:

Unanticipated Discovery of Human Remains and Associated Funerary Objects: *Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed.*

Mitigation Measure TCR-5:

Resource Assessment & Continuation of Work Protocol:
Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the discovery location. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are human and subsequently Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

Mitigation Measure TCR-6:

Kizh-Gabrieleno Procedures for burials and funerary remains:
If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

Mitigation Measure TCR-7:

Treatment Measures:
Prior to the continuation of ground disturbing activities, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected

in perpetuity. There shall be no publicity regarding any cultural materials recovered.

Mitigation Measure TCR-8:

Professional Standards:
Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.

Based on completion of consultation under AB 52 with interested tribes, final recommendations shall be incorporated into the Project's Conditions of Approval. Additionally, implementation of Mitigation Measure CR-2 would ensure any impacts to any human remains of Native American origin that are encountered during all earth-moving activities are reduced to a level of less than significant.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications, the construction or relocation 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?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
d) Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure?	☐	☐	☒	☐
e) Negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
f) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a) **Less than Significant Impact.** The Project Site would be served by an existing sewer collection system serving the site and vicinity. The City of Rialto Water Resources Division manages the wastewater collection system. All of the wastewater flows from the City are collected by the City's local sewer mains and delivered to the Rialto Wastewater Treatment Plant (WWTP) located on Rancho Avenue for wastewater treatment. The WWTP has a design capacity of approximately 12 MGD. The WWTP is permitted by the State of California under NPDES Permit CA0105295 which allows up to 11.7 MGD discharge of tertiary treated and disinfected water to the Santa Ana River at three points. Implementation of the Proposed Project would not exceed wastewater treatment requirements of the Regional Water Quality Control Board, Santa Ana Region. The Proposed Project would be served by Southern California Edison for electricity needs and Southern California Gas Company for natural gas needs. Existing electric and natural gas infrastructure will serve the Project Site and no relocation or construction of new infrastructure is necessary. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b, c) **Less than Significant Impact.** The Proposed Project would be served by the Rialto Public Works Department Water Division and would connect to the existing water line along Cedar Avenue. The City’s primary source of water is City-owned water wells. These wells draw water from four basins: Lytle Creek Surface Water Basin, Rialto Ground Water Basin, Bunkerhill Ground Water Basin, and Chino Hill Ground Water Basin. Additionally, the City is contractually entitled to receive 2,500 acre-feet per year of imported water from the San Bernardino Bally Municipal Water District (SBVMWD) through the baseline feeder and an additional 1.5 MGD from the West Valley Water District’s (WVWD) Water Filtration Plant.

As stated in the City of Rialto 2010 Urban Water Management Plan (UWMP), the City Water Services obtains its water supply from several sources. The primary source of water supply for the City is from groundwater supplies. The groundwater is pumped from the Rialto Basin, Chino Basin, North Riverside Basin, and the Lytle Creek Basin. The City also receives water from the West Valley Water District (WVWD) and the San Bernardino Valley Municipal Water District (SBVMWD). The UWMP provides a supply and analysis which includes future supply and demand comparisons for the service area. As shown in

Table 5.10 of the UWMP, the projected 2030 multiple dry year water supply is approximately 14,650 acre-feet (AF), while the projected 2030 multiple dry year water demand is approximately 12,020 AF. The City can expect to have sufficient water supplies through 2030 for all climatologic classifications. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

d, e) **Less than Significant Impact.** Solid waste from the City of Rialto is transported to and disposed of at the Mid-Valley Sanitary Landfill. The landfill has a maximum permitted daily capacity of 7,500 tons per day and has an expected operational life through 2030. According to the California Integrated Waste Management Board's estimated solid waste generation rates a total of approximately 12.23 pounds per household per day is estimated for residential development. The Proposed Project would therefore generate an estimated 269.06 pounds per day or 0.13453 tons per day. This would not be considered a significant amount of additional solid waste into the County's waste stream as it represents an estimated 0.00001794 percent of the total permitted tons day. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

f) **Less than Significant Impact.** The Proposed Project is subject to Assembly Bill 1327, Chapter 18, Solid Waste Reuse and Recycling Access Act of 1991 (Act). The Act requires that adequate areas be provided for collecting and loading recyclable materials such as paper products, glass, and other recyclables. The Project must conform to the City's requirements to ensure compliance with the Act. Implementation of the waste reduction and recycling programs would reduce the amount of solid waste generated by the Proposed Project and diverted to landfills. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

XX. WILDFIRE

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) 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 exacerbate fire risk or that	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
may result in temporary 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) **No Impact.** According to Exhibit 5.3 of the City's General Plan, the Project Site is not located within a high fire hazard severity zone. The 2007 San Bernardino County General Plan designates potential evacuation routes in the event of wildland fires and other natural disasters, and to ensure adequate access of emergency vehicles to all communities. Implementation of the Proposed Project would not impair any emergency response plans or counter any emergency evacuation routes or plans. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

b, d) **No Impact.** Wildland fire hazards are of concern where development is adjacent to wildland areas, particularly in north Rialto. Fires starting in the foothill areas can easily spread south and consume urban development, especially if pushed by the Santa Ana winds that blow from the Cajon Pass. However, the Project Site is not located in an area designated as being at risk for fire hazard. The Project Site is generally flat and is over 10 miles from the nearest high fire hazard zone. The Project Site has no known susceptibility to landslides and would not have downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

c) **No Impact.** The Proposed Project is currently surrounded by development on all sides that is serviced by existing infrastructure including roadways (i.e. Cedar Avenue, power lines, natural gas lines, water, sewer and telephone). The Proposed Project does not include the installation or maintenance of any new or expanded infrastructure and therefore the risk of fire from these activities is not anticipated. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE:

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
a) Does the project have the potential to substantially 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
examples of the major periods of California history or prehistory?				
b) Does the project 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) Does the project have environmental effects, which will cause Substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a) **Less than Significant Impact**. The Biological Resources Assessment prepared for the Project Site concluded that all direct, indirect, and cumulative impacts would be reduced to a less than significant impact with implementation of Mitigation Measure BIO-1. Therefore, the Proposed Project is not anticipated to have the potential to significantly degrade the overall quality of the region's environment, or substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population or 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. Potential impacts to cultural resources were identified in the Phase I Cultural Resources Investigation prepared for the Proposed Project. Geological impacts were assessed in the Geotechnical Investigation prepared for the Project Site. As discussed in this Initial Study, all direct, indirect, and cumulative can be reduced to a less than significant level with implementation of Mitigation Measures BIO-1 through BIO-2, CR-1 through CR-2, GEO-1 through GEO-2 and TCR-1 through TCR-3. Adherence to mitigation measures as presented in this Initial Study would ensure that important examples of the major periods of California history or prehistory are not eliminated as a result of the Proposed Project. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

b) **Less than Significant Impact.** Cumulative impacts are defined as two or more individual affects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the development when added to the impacts of other closely related past, present, and reasonably foreseeable or probable future developments. Cumulative impacts can result from individually minor, but collectively significant, developments taking place over a period. The CEQA Guidelines, Section 15130 (a) and (b), states:

(a) Cumulative impacts shall be discussed when the project's incremental effect is cumulatively considerable.

(b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided of the effects attributable to the project. The discussion should be guided by the standards of practicality and reasonableness.

With the implementation of recommended mitigation measures and conditions of approval, impacts associated with the Proposed Project are not be considered individually significant and would not be considered cumulatively or collectively considerable or adverse. Impacts identified in this Initial Study can be reduced to a less than significant impact. No significant cumulative impacts are identified or are anticipated, and no mitigation measures are required.

c) **Less Than Significant Impact**. The incorporation of design measures, City of Rialto's policies, standards, and guidelines and proposed mitigation measures as identified within this Initial Study would ensure that the Proposed Project would have no significant adverse effects on human beings, either directly or indirectly on an individual or cumulative basis. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

SECTION 4
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APPENDIX A
AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

Cedar Villas

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	22.00	Dwelling Unit	2.40	39,600.00	63
Other Non-Asphalt Surfaces	0.21	Acre	0.21	9,147.60	0
Other Asphalt Surfaces	0.57	Acre	0.57	24,829.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per Site Plan

Construction Phase -

Grading -

Vehicle Trips - Per TIA

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	880.00
tblLandUse	LotAcreage	7.14	2.40
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1199	1.1114	0.9109	1.6500e-003	0.0864	0.0600	0.1464	0.0423	0.0562	0.0986	0.0000	143.8703	143.8703	0.0321	0.0000	144.6726
2021	0.2858	1.4104	1.3781	2.4400e-003	0.0231	0.0743	0.0974	6.2100e-003	0.0699	0.0761	0.0000	212.0971	212.0971	0.0459	0.0000	213.2443
Maximum	**0.2858**	**1.4104**	**1.3781**	**2.4400e-003**	**0.0864**	**0.0743**	**0.1464**	**0.0423**	**0.0699**	**0.0986**	**0.0000**	**212.0971**	**212.0971**	**0.0459**	**0.0000**	**213.2443**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1199	1.1114	0.9109	1.6500e-003	0.0471	0.0600	0.1071	0.0213	0.0562	0.0775	0.0000	143.8702	143.8702	0.0321	0.0000	144.6725
2021	0.2858	1.4104	1.3781	2.4400e-003	0.0231	0.0743	0.0974	6.2100e-003	0.0699	0.0761	0.0000	212.0969	212.0969	0.0459	0.0000	213.2441
Maximum	**0.2858**	**1.4104**	**1.3781**	**2.4400e-003**	**0.0471**	**0.0743**	**0.1071**	**0.0213**	**0.0699**	**0.0775**	**0.0000**	**212.0969**	**212.0969**	**0.0459**	**0.0000**	**213.2441**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**35.90**	**0.00**	**16.11**	**43.41**	**0.00**	**12.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-13-2020**	**11-12-2020**	0.8388	0.8388
2	**11-13-2020**	**2-12-2021**	0.7033	0.7033
3	**2-13-2021**	**5-12-2021**	0.6454	0.6454
4	**5-13-2021**	**8-12-2021**	0.5976	0.5976
5	**8-13-2021**	**9-30-2021**	0.1492	0.1492
		Highest	0.8388	0.8388

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2371	8.3300e-003	0.3672	3.7000e-004		0.0223	0.0223		0.0223	0.0223	2.3368	4.8612	7.1980	7.3300e-003	1.6000e-004	7.4285
Energy	3.6300e-003	0.0310	0.0132	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	97.0197	97.0197	3.2100e-003	1.1800e-003	97.4517
Mobile	0.0734	0.5600	0.9317	3.6000e-003	0.2702	2.6700e-003	0.2729	0.0724	2.5100e-003	0.0749	0.0000	332.9646	332.9646	0.0175	0.0000	333.4028
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900
Water						0.0000	0.0000		0.0000	0.0000	0.4548	9.1456	9.6004	0.0471	1.1800e-003	11.1294
Total	**0.3142**	**0.5994**	**1.3121**	**4.1700e-003**	**0.2702**	**0.0274**	**0.2977**	**0.0724**	**0.0273**	**0.0997**	**8.0348**	**443.9911**	**452.0259**	**0.3850**	**2.5200e-003**	**462.4024**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2371	8.3300e-003	0.3672	3.7000e-004		0.0223	0.0223		0.0223	0.0223	2.3368	4.8612	7.1980	7.3300e-003	1.6000e-004	7.4285
Energy	3.6300e-003	0.0310	0.0132	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	97.0197	97.0197	3.2100e-003	1.1800e-003	97.4517
Mobile	0.0734	0.5600	0.9317	3.6000e-003	0.2702	2.6700e-003	0.2729	0.0724	2.5100e-003	0.0749	0.0000	332.9646	332.9646	0.0175	0.0000	333.4028
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900
Water						0.0000	0.0000		0.0000	0.0000	0.4548	9.1456	9.6004	0.0471	1.1800e-003	11.1294
Total	**0.3142**	**0.5994**	**1.3121**	**4.1700e-003**	**0.2702**	**0.0274**	**0.2977**	**0.0724**	**0.0273**	**0.0997**	**8.0348**	**443.9911**	**452.0259**	**0.3850**	**2.5200e-003**	**462.4024**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/13/2020	8/19/2020	5	5	
2	Grading	Grading	8/20/2020	8/31/2020	5	8	
3	Building Construction	Building Construction	9/1/2020	7/19/2021	5	230	
4	Paving	Paving	7/20/2021	8/12/2021	5	18	
5	Architectural Coating	Architectural Coating	8/13/2021	9/7/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.78

Residential Indoor: 80,190; Residential Outdoor: 26,730; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,039 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	110.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	22.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.7500e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4229	0.4229	1.0000e-005	0.0000	0.4232
Total	**2.2000e-004**	**1.7000e-004**	**1.7500e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4229**	**0.4229**	**1.0000e-005**	**0.0000**	**0.4232**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0203	0.0000	0.0203	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0203**	**5.4900e-003**	**0.0258**	**0.0112**	**5.0500e-003**	**0.0162**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.7500e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4229	0.4229	1.0000e-005	0.0000	0.4232
Total	**2.2000e-004**	**1.7000e-004**	**1.7500e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4229**	**0.4229**	**1.0000e-005**	**0.0000**	**0.4232**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0263	0.0000	0.0263	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0263**	**5.0900e-003**	**0.0314**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5000e-004	0.0139	2.1300e-003	4.0000e-005	9.5000e-004	4.0000e-005	9.9000e-004	2.6000e-004	4.0000e-005	3.0000e-004	0.0000	4.1093	4.1093	2.3000e-004	0.0000	4.1151
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.3300e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5639	0.5639	2.0000e-005	0.0000	0.5643
Total	**6.5000e-004**	**0.0141**	**4.4600e-003**	**5.0000e-005**	**1.6100e-003**	**4.0000e-005**	**1.6500e-003**	**4.3000e-004**	**4.0000e-005**	**4.8000e-004**	**0.0000**	**4.6732**	**4.6732**	**2.5000e-004**	**0.0000**	**4.6795**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0118	0.0000	0.0118	6.0600e-003	0.0000	6.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0118**	**5.0900e-003**	**0.0169**	**6.0600e-003**	**4.6900e-003**	**0.0108**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5000e-004	0.0139	2.1300e-003	4.0000e-005	9.5000e-004	4.0000e-005	9.9000e-004	2.6000e-004	4.0000e-005	3.0000e-004	0.0000	4.1093	4.1093	2.3000e-004	0.0000	4.1151
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.3300e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5639	0.5639	2.0000e-005	0.0000	0.5643
Total	**6.5000e-004**	**0.0141**	**4.4600e-003**	**5.0000e-005**	**1.6100e-003**	**4.0000e-005**	**1.6500e-003**	**4.3000e-004**	**4.0000e-005**	**4.8000e-004**	**0.0000**	**4.6732**	**4.6732**	**2.5000e-004**	**0.0000**	**4.6795**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0933	0.8442	0.7413	1.1800e-003		0.0492	0.0492		0.0462	0.0462	0.0000	101.9084	101.9084	0.0249	0.0000	102.5299
Total	**0.0933**	**0.8442**	**0.7413**	**1.1800e-003**		**0.0492**	**0.0492**		**0.0462**	**0.0462**	**0.0000**	**101.9084**	**101.9084**	**0.0249**	**0.0000**	**102.5299**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0900e-003	0.0376	7.8600e-003	9.0000e-005	2.2200e-003	1.7000e-004	2.3900e-003	6.4000e-004	1.6000e-004	8.0000e-004	0.0000	8.9872	8.9872	6.2000e-004	0.0000	9.0027
Worker	4.7800e-003	3.7600e-003	0.0375	1.0000e-004	0.0106	7.0000e-005	0.0107	2.8200e-003	7.0000e-005	2.8800e-003	0.0000	9.0975	9.0975	2.7000e-004	0.0000	9.1043
Total	**5.8700e-003**	**0.0413**	**0.0454**	**1.9000e-004**	**0.0128**	**2.4000e-004**	**0.0131**	**3.4600e-003**	**2.3000e-004**	**3.6800e-003**	**0.0000**	**18.0846**	**18.0846**	**8.9000e-004**	**0.0000**	**18.1070**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0933	0.8442	0.7413	1.1800e-003		0.0492	0.0492		0.0462	0.0462	0.0000	101.9083	101.9083	0.0249	0.0000	102.5298
Total	**0.0933**	**0.8442**	**0.7413**	**1.1800e-003**		**0.0492**	**0.0492**		**0.0462**	**0.0462**	**0.0000**	**101.9083**	**101.9083**	**0.0249**	**0.0000**	**102.5298**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0900e-003	0.0376	7.8600e-003	9.0000e-005	2.2200e-003	1.7000e-004	2.3900e-003	6.4000e-004	1.6000e-004	8.0000e-004	0.0000	8.9872	8.9872	6.2000e-004	0.0000	9.0027
Worker	4.7800e-003	3.7600e-003	0.0375	1.0000e-004	0.0106	7.0000e-005	0.0107	2.8200e-003	7.0000e-005	2.8800e-003	0.0000	9.0975	9.0975	2.7000e-004	0.0000	9.1043
Total	**5.8700e-003**	**0.0413**	**0.0454**	**1.9000e-004**	**0.0128**	**2.4000e-004**	**0.0131**	**3.4600e-003**	**2.3000e-004**	**3.6800e-003**	**0.0000**	**18.0846**	**18.0846**	**8.9000e-004**	**0.0000**	**18.1070**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1350	1.2377	1.1768	1.9100e-003		0.0681	0.0681		0.0640	0.0640	0.0000	164.4625	164.4625	0.0397	0.0000	165.4544
Total	**0.1350**	**1.2377**	**1.1768**	**1.9100e-003**		**0.0681**	**0.0681**		**0.0640**	**0.0640**	**0.0000**	**164.4625**	**164.4625**	**0.0397**	**0.0000**	**165.4544**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5100e-003	0.0553	0.0112	1.5000e-004	3.5800e-003	1.0000e-004	3.6800e-003	1.0300e-003	9.0000e-005	1.1200e-003	0.0000	14.4251	14.4251	9.7000e-004	0.0000	14.4494
Worker	7.1900e-003	5.4300e-003	0.0557	1.6000e-004	0.0171	1.1000e-004	0.0172	4.5500e-003	1.0000e-004	4.6500e-003	0.0000	14.2127	14.2127	4.0000e-004	0.0000	14.2226
Total	**8.7000e-003**	**0.0607**	**0.0669**	**3.1000e-004**	**0.0207**	**2.1000e-004**	**0.0209**	**5.5800e-003**	**1.9000e-004**	**5.7700e-003**	**0.0000**	**28.6378**	**28.6378**	**1.3700e-003**	**0.0000**	**28.6720**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1350	1.2377	1.1768	1.9100e-003		0.0681	0.0681		0.0640	0.0640	0.0000	164.4623	164.4623	0.0397	0.0000	165.4542
Total	**0.1350**	**1.2377**	**1.1768**	**1.9100e-003**		**0.0681**	**0.0681**		**0.0640**	**0.0640**	**0.0000**	**164.4623**	**164.4623**	**0.0397**	**0.0000**	**165.4542**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5100e-003	0.0553	0.0112	1.5000e-004	3.5800e-003	1.0000e-004	3.6800e-003	1.0300e-003	9.0000e-005	1.1200e-003	0.0000	14.4251	14.4251	9.7000e-004	0.0000	14.4494
Worker	7.1900e-003	5.4300e-003	0.0557	1.6000e-004	0.0171	1.1000e-004	0.0172	4.5500e-003	1.0000e-004	4.6500e-003	0.0000	14.2127	14.2127	4.0000e-004	0.0000	14.2226
Total	**8.7000e-003**	**0.0607**	**0.0669**	**3.1000e-004**	**0.0207**	**2.1000e-004**	**0.0209**	**5.5800e-003**	**1.9000e-004**	**5.7700e-003**	**0.0000**	**28.6378**	**28.6378**	**1.3700e-003**	**0.0000**	**28.6720**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	7.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7336**	**14.7336**	**4.6300e-003**	**0.0000**	**14.8493**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	6.3000e-004	6.4100e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.6378	1.6378	5.0000e-005	0.0000	1.6390
Total	**8.3000e-004**	**6.3000e-004**	**6.4100e-003**	**2.0000e-005**	**1.9700e-003**	**1.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.6378**	**1.6378**	**5.0000e-005**	**0.0000**	**1.6390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	7.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7335**	**14.7335**	**4.6300e-003**	**0.0000**	**14.8493**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	6.3000e-004	6.4100e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.6378	1.6378	5.0000e-005	0.0000	1.6390
Total	**8.3000e-004**	**6.3000e-004**	**6.4100e-003**	**2.0000e-005**	**1.9700e-003**	**1.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.6378**	**1.6378**	**5.0000e-005**	**0.0000**	**1.6390**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1286					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.1306**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.2800e-003	0.0000	3.9000e-004	0.0000	4.0000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3276	0.3276	1.0000e-005	0.0000	0.3278
Total	**1.7000e-004**	**1.3000e-004**	**1.2800e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**4.0000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3276**	**0.3276**	**1.0000e-005**	**0.0000**	**0.3278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1286					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.1306**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.2800e-003	0.0000	3.9000e-004	0.0000	4.0000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3276	0.3276	1.0000e-005	0.0000	0.3278
Total	**1.7000e-004**	**1.3000e-004**	**1.2800e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**4.0000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3276**	**0.3276**	**1.0000e-005**	**0.0000**	**0.3278**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0734	0.5600	0.9317	3.6000e-003	0.2702	2.6700e-003	0.2729	0.0724	2.5100e-003	0.0749	0.0000	332.9646	332.9646	0.0175	0.0000	333.4028
Unmitigated	0.0734	0.5600	0.9317	3.6000e-003	0.2702	2.6700e-003	0.2729	0.0724	2.5100e-003	0.0749	0.0000	332.9646	332.9646	0.0175	0.0000	333.4028

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	207.68	207.68	207.68	709,674	709,674
Total	207.68	207.68	207.68	709,674	709,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Non-Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Single Family Housing	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	61.0997	61.0997	2.5200e-003	5.2000e-004	61.3183
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	61.0997	61.0997	2.5200e-003	5.2000e-004	61.3183
NaturalGas Mitigated	3.6300e-003	0.0310	0.0132	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.9200	35.9200	6.9000e-004	6.6000e-004	36.1335
NaturalGas Unmitigated	3.6300e-003	0.0310	0.0132	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.9200	35.9200	6.9000e-004	6.6000e-004	36.1335

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	673115	3.6300e-003	0.0310	0.0132	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.9200	35.9200	6.9000e-004	6.6000e-004	36.1335
Total		**3.6300e-003**	**0.0310**	**0.0132**	**2.0000e-004**		**2.5100e-003**	**2.5100e-003**		**2.5100e-003**	**2.5100e-003**	**0.0000**	**35.9200**	**35.9200**	**6.9000e-004**	**6.6000e-004**	**36.1335**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	673115	3.6300e-003	0.0310	0.0132	2.0000e-004		2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.9200	35.9200	6.9000e-004	6.6000e-004	36.1335
Total		**3.6300e-003**	**0.0310**	**0.0132**	**2.0000e-004**		**2.5100e-003**	**2.5100e-003**		**2.5100e-003**	**2.5100e-003**	**0.0000**	**35.9200**	**35.9200**	**6.9000e-004**	**6.6000e-004**	**36.1335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	191763	61.0997	2.5200e-003	5.2000e-004	61.3183
Total		**61.0997**	**2.5200e-003**	**5.2000e-004**	**61.3183**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	191763	61.0997	2.5200e-003	5.2000e-004	61.3183
Total		**61.0997**	**2.5200e-003**	**5.2000e-004**	**61.3183**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2371	8.3300e-003	0.3672	3.7000e-004		0.0223	0.0223		0.0223	0.0223	2.3368	4.8612	7.1980	7.3300e-003	1.6000e-004	7.4285
Unmitigated	0.2371	8.3300e-003	0.3672	3.7000e-004		0.0223	0.0223		0.0223	0.0223	2.3368	4.8612	7.1980	7.3300e-003	1.6000e-004	7.4285

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0129					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1453					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0721	5.7100e-003	0.1399	3.6000e-004		0.0210	0.0210		0.0210	0.0210	2.3368	4.4906	6.8274	6.9700e-003	1.6000e-004	7.0489
Landscaping	6.8900e-003	2.6200e-003	0.2274	1.0000e-005		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	0.3706	0.3706	3.6000e-004	0.0000	0.3796
Total	**0.2371**	**8.3300e-003**	**0.3672**	**3.7000e-004**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**2.3368**	**4.8612**	**7.1980**	**7.3300e-003**	**1.6000e-004**	**7.4285**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0129					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1453					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0721	5.7100e-003	0.1399	3.6000e-004		0.0210	0.0210		0.0210	0.0210	2.3368	4.4906	6.8274	6.9700e-003	1.6000e-004	7.0489
Landscaping	6.8900e-003	2.6200e-003	0.2274	1.0000e-005		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	0.3706	0.3706	3.6000e-004	0.0000	0.3796
Total	**0.2371**	**8.3300e-003**	**0.3672**	**3.7000e-004**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**2.3368**	**4.8612**	**7.1980**	**7.3300e-003**	**1.6000e-004**	**7.4285**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	9.6004	0.0471	1.1800e-003	11.1294
Unmitigated	9.6004	0.0471	1.1800e-003	11.1294

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Total		**9.6004**	**0.0471**	**1.1800e-003**	**11.1294**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Total		**9.6004**	**0.0471**	**1.1800e-003**	**11.1294**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.2433	0.3099	0.0000	12.9900
Unmitigated	5.2433	0.3099	0.0000	12.9900

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	25.83	5.2433	0.3099	0.0000	12.9900
Total		**5.2433**	**0.3099**	**0.0000**	**12.9900**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	25.83	5.2433	0.3099	0.0000	12.9900
Total		**5.2433**	**0.3099**	**0.0000**	**12.9900**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Cedar Villas

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	22.00	Dwelling Unit	2.40	39,600.00	63
Other Non-Asphalt Surfaces	0.21	Acre	0.21	9,147.60	0
Other Asphalt Surfaces	0.57	Acre	0.57	24,829.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per Site Plan

Construction Phase -

Grading -

Vehicle Trips - Per TIA

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	880.00
tblLandUse	LotAcreage	7.14	2.40
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1747	42.4804	22.3231	0.0421	18.2675	2.1987	20.4662	9.9840	2.0228	12.0069	0.0000	4,186.9714	4,186.9714	1.1981	0.0000	4,211.8710
2021	14.5302	18.2727	17.6311	0.0315	0.2972	0.9615	1.2587	0.0800	0.9040	0.9840	0.0000	3,021.7331	3,021.7331	0.6373	0.0000	3,037.6644
Maximum	**14.5302**	**42.4804**	**22.3231**	**0.0421**	**18.2675**	**2.1987**	**20.4662**	**9.9840**	**2.0228**	**12.0069**	**0.0000**	**4,186.9714**	**4,186.9714**	**1.1981**	**0.0000**	**4,211.8710**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1747	42.4804	22.3231	0.0421	8.3310	2.1987	10.5298	4.5222	2.0228	6.5450	0.0000	4,186.9714	4,186.9714	1.1981	0.0000	4,211.8710
2021	14.5302	18.2727	17.6311	0.0315	0.2972	0.9615	1.2587	0.0800	0.9040	0.9840	0.0000	3,021.7331	3,021.7331	0.6373	0.0000	3,037.6644
Maximum	**14.5302**	**42.4804**	**22.3231**	**0.0421**	**8.3310**	**2.1987**	**10.5298**	**4.5222**	**2.0228**	**6.5450**	**0.0000**	**4,186.9714**	**4,186.9714**	**1.1981**	**0.0000**	**4,211.8710**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.52**	**0.00**	**45.74**	**54.27**	**0.00**	**42.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514
Energy	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Mobile	0.4717	2.9960	5.6567	0.0210	1.5131	0.0147	1.5278	0.4049	0.0137	0.4187		2,142.4185	2,142.4185	0.1067		2,145.0869
Total	**7.1781**	**3.6434**	**18.7362**	**0.0507**	**1.5131**	**1.7190**	**3.2321**	**0.4049**	**1.7181**	**2.1230**	**206.0722**	**2,758.6458**	**2,964.7180**	**0.7286**	**0.0180**	**2,988.2866**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514
Energy	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Mobile	0.4717	2.9960	5.6567	0.0210	1.5131	0.0147	1.5278	0.4049	0.0137	0.4187		2,142.4185	2,142.4185	0.1067		2,145.0869
Total	**7.1781**	**3.6434**	**18.7362**	**0.0507**	**1.5131**	**1.7190**	**3.2321**	**0.4049**	**1.7181**	**2.1230**	**206.0722**	**2,758.6458**	**2,964.7180**	**0.7286**	**0.0180**	**2,988.2866**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/13/2020	8/19/2020	5	5	
2	Grading	Grading	8/20/2020	8/31/2020	5	8	
3	Building Construction	Building Construction	9/1/2020	7/19/2021	5	230	
4	Paving	Paving	7/20/2021	8/12/2021	5	18	
5	Architectural Coating	Architectural Coating	8/13/2021	9/7/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.78

Residential Indoor: 80,190; Residential Outdoor: 26,730; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,039 (Architectural Coating – sqft)

OffRoad Equipment

Cedar Villas - San Bernardino-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	110.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	22.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0631	0.8095	2.0400e-003	0.2012	1.3200e-003	0.2025	0.0534	1.2100e-003	0.0546		203.4151	203.4151	6.2100e-003		203.5704
Total	**0.0982**	**0.0631**	**0.8095**	**2.0400e-003**	**0.2012**	**1.3200e-003**	**0.2025**	**0.0534**	**1.2100e-003**	**0.0546**		**203.4151**	**203.4151**	**6.2100e-003**		**203.5704**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0631	0.8095	2.0400e-003	0.2012	1.3200e-003	0.2025	0.0534	1.2100e-003	0.0546		203.4151	203.4151	6.2100e-003		203.5704
Total	**0.0982**	**0.0631**	**0.8095**	**2.0400e-003**	**0.2012**	**1.3200e-003**	**0.2025**	**0.0534**	**1.2100e-003**	**0.0546**		**203.4151**	**203.4151**	**6.2100e-003**		**203.5704**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5648	0.0000	6.5648	3.3694	0.0000	3.3694			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5648**	**1.2734**	**7.8382**	**3.3694**	**1.1716**	**4.5409**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0854	3.3872	0.4998	0.0108	0.2406	0.0101	0.2507	0.0660	9.6600e-003	0.0756		1,144.9736	1,144.9736	0.0618		1,146.5184
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0525	0.6746	1.7000e-003	0.1677	1.1000e-003	0.1688	0.0445	1.0100e-003	0.0455		169.5126	169.5126	5.1700e-003		169.6420
Total	**0.1673**	**3.4397**	**1.1744**	**0.0125**	**0.4083**	**0.0112**	**0.4195**	**0.1104**	**0.0107**	**0.1211**		**1,314.4862**	**1,314.4862**	**0.0670**		**1,316.1604**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9542	0.0000	2.9542	1.5162	0.0000	1.5162			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**2.9542**	**1.2734**	**4.2276**	**1.5162**	**1.1716**	**2.6878**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0854	3.3872	0.4998	0.0108	0.2406	0.0101	0.2507	0.0660	9.6600e-003	0.0756		1,144.9736	1,144.9736	0.0618		1,146.5184
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0525	0.6746	1.7000e-003	0.1677	1.1000e-003	0.1688	0.0445	1.0100e-003	0.0455		169.5126	169.5126	5.1700e-003		169.6420
Total	**0.1673**	**3.4397**	**1.1744**	**0.0125**	**0.4083**	**0.0112**	**0.4195**	**0.1104**	**0.0107**	**0.1211**		**1,314.4862**	**1,314.4862**	**0.0670**		**1,316.1604**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0243	0.8442	0.1645	2.1700e-003	0.0512	3.8800e-003	0.0551	0.0148	3.7200e-003	0.0185		228.8811	228.8811	0.0149		229.2528
Worker	0.1201	0.0771	0.9894	2.5000e-003	0.2459	1.6100e-003	0.2475	0.0652	1.4800e-003	0.0667		248.6185	248.6185	7.5900e-003		248.8083
Total	**0.1444**	**0.9213**	**1.1539**	**4.6700e-003**	**0.2972**	**5.4900e-003**	**0.3026**	**0.0800**	**5.2000e-003**	**0.0852**		**477.4996**	**477.4996**	**0.0225**		**478.0610**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0243	0.8442	0.1645	2.1700e-003	0.0512	3.8800e-003	0.0551	0.0148	3.7200e-003	0.0185		228.8811	228.8811	0.0149		229.2528
Worker	0.1201	0.0771	0.9894	2.5000e-003	0.2459	1.6100e-003	0.2475	0.0652	1.4800e-003	0.0667		248.6185	248.6185	7.5900e-003		248.8083
Total	**0.1444**	**0.9213**	**1.1539**	**4.6700e-003**	**0.2972**	**5.4900e-003**	**0.3026**	**0.0800**	**5.2000e-003**	**0.0852**		**477.4996**	**477.4996**	**0.0225**		**478.0610**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0207	0.7715	0.1452	2.1600e-003	0.0512	1.3200e-003	0.0526	0.0148	1.2700e-003	0.0160		227.6715	227.6715	0.0144		228.0311
Worker	0.1118	0.0691	0.9108	2.4200e-003	0.2459	1.5700e-003	0.2475	0.0652	1.4500e-003	0.0667		240.6977	240.6977	6.8500e-003		240.8690
Total	**0.1325**	**0.8406**	**1.0559**	**4.5800e-003**	**0.2972**	**2.8900e-003**	**0.3000**	**0.0800**	**2.7200e-003**	**0.0827**		**468.3692**	**468.3692**	**0.0212**		**468.9001**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0207	0.7715	0.1452	2.1600e-003	0.0512	1.3200e-003	0.0526	0.0148	1.2700e-003	0.0160		227.6715	227.6715	0.0144		228.0311
Worker	0.1118	0.0691	0.9108	2.4200e-003	0.2459	1.5700e-003	0.2475	0.0652	1.4500e-003	0.0667		240.6977	240.6977	6.8500e-003		240.8690
Total	**0.1325**	**0.8406**	**1.0559**	**4.5800e-003**	**0.2972**	**2.8900e-003**	**0.3000**	**0.0800**	**2.7200e-003**	**0.0827**		**468.3692**	**468.3692**	**0.0212**		**468.9001**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0940	10.8399	12.2603	0.0189		0.5788	0.5788		0.5342	0.5342		1,804.5523	1,804.5523	0.5670		1,818.7270
Paving	0.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1769**	**10.8399**	**12.2603**	**0.0189**		**0.5788**	**0.5788**		**0.5342**	**0.5342**		**1,804.5523**	**1,804.5523**	**0.5670**		**1,818.7270**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1016	0.0628	0.8280	2.2000e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		218.8161	218.8161	6.2300e-003		218.9718
Total	**0.1016**	**0.0628**	**0.8280**	**2.2000e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**218.8161**	**218.8161**	**6.2300e-003**		**218.9718**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0940	10.8399	12.2603	0.0189		0.5788	0.5788		0.5342	0.5342	0.0000	1,804.5523	1,804.5523	0.5670		1,818.7270
Paving	0.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1769**	**10.8399**	**12.2603**	**0.0189**		**0.5788**	**0.5788**		**0.5342**	**0.5342**	**0.0000**	**1,804.5523**	**1,804.5523**	**0.5670**		**1,818.7270**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1016	0.0628	0.8280	2.2000e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		218.8161	218.8161	6.2300e-003		218.9718
Total	**0.1016**	**0.0628**	**0.8280**	**2.2000e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**218.8161**	**218.8161**	**6.2300e-003**		**218.9718**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.2910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**14.5099**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0203	0.0126	0.1656	4.4000e-004	0.0447	2.9000e-004	0.0450	0.0119	2.6000e-004	0.0121		43.7632	43.7632	1.2500e-003		43.7944
Total	**0.0203**	**0.0126**	**0.1656**	**4.4000e-004**	**0.0447**	**2.9000e-004**	**0.0450**	**0.0119**	**2.6000e-004**	**0.0121**		**43.7632**	**43.7632**	**1.2500e-003**		**43.7944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.2910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**14.5099**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0203	0.0126	0.1656	4.4000e-004	0.0447	2.9000e-004	0.0450	0.0119	2.6000e-004	0.0121		43.7632	43.7632	1.2500e-003		43.7944
Total	**0.0203**	**0.0126**	**0.1656**	**4.4000e-004**	**0.0447**	**2.9000e-004**	**0.0450**	**0.0119**	**2.6000e-004**	**0.0121**		**43.7632**	**43.7632**	**1.2500e-003**		**43.7944**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4717	2.9960	5.6567	0.0210	1.5131	0.0147	1.5278	0.4049	0.0137	0.4187		2,142.4185	2,142.4185	0.1067		2,145.0869
Unmitigated	0.4717	2.9960	5.6567	0.0210	1.5131	0.0147	1.5278	0.4049	0.0137	0.4187		2,142.4185	2,142.4185	0.1067		2,145.0869

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	207.68	207.68	207.68	709,674	709,674
Total	207.68	207.68	207.68	709,674	709,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Non-Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Single Family Housing	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
NaturalGas Unmitigated	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1844.15	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Total		**0.0199**	**0.1700**	**0.0723**	**1.0800e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**		**216.9590**	**216.9590**	**4.1600e-003**	**3.9800e-003**	**218.2483**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.84415	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Total		**0.0199**	**0.1700**	**0.0723**	**1.0800e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**		**216.9590**	**216.9590**	**4.1600e-003**	**3.9800e-003**	**218.2483**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514
Unmitigated	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7961					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.7648	0.4565	11.1881	0.0285		1.6805	1.6805		1.6805	1.6805	206.0722	396.0000	602.0722	0.6146	0.0140	621.6039
Landscaping	0.0551	0.0210	1.8191	1.0000e-004		0.0100	0.0100		0.0100	0.0100		3.2683	3.2683	3.1700e-003		3.3475
Total	**6.6865**	**0.4775**	**13.0072**	**0.0286**		**1.6906**	**1.6906**		**1.6906**	**1.6906**	**206.0722**	**399.2683**	**605.3405**	**0.6177**	**0.0140**	**624.9514**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7961					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.7648	0.4565	11.1881	0.0285		1.6805	1.6805		1.6805	1.6805	206.0722	396.0000	602.0722	0.6146	0.0140	621.6039
Landscaping	0.0551	0.0210	1.8191	1.0000e-004		0.0100	0.0100		0.0100	0.0100		3.2683	3.2683	3.1700e-003		3.3475
Total	**6.6865**	**0.4775**	**13.0072**	**0.0286**		**1.6906**	**1.6906**		**1.6906**	**1.6906**	**206.0722**	**399.2683**	**605.3405**	**0.6177**	**0.0140**	**624.9514**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Cedar Villas

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	22.00	Dwelling Unit	2.40	39,600.00	63
Other Non-Asphalt Surfaces	0.21	Acre	0.21	9,147.60	0
Other Asphalt Surfaces	0.57	Acre	0.57	24,829.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per Site Plan

Construction Phase -

Grading -

Vehicle Trips - Per TIA

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	880.00
tblLandUse	LotAcreage	7.14	2.40
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1748	42.4837	22.1789	0.0417	18.2675	2.1987	20.4662	9.9840	2.0228	12.0069	0.0000	4,139.6667	4,139.6667	1.1973	0.0000	4,164.6820
2021	14.5303	18.2681	17.4920	0.0312	0.2972	0.9616	1.2587	0.0800	0.9040	0.9840	0.0000	2,988.1215	2,988.1215	0.6380	0.0000	3,004.0708
Maximum	**14.5303**	**42.4837**	**22.1789**	**0.0417**	**18.2675**	**2.1987**	**20.4662**	**9.9840**	**2.0228**	**12.0069**	**0.0000**	**4,139.6667**	**4,139.6667**	**1.1973**	**0.0000**	**4,164.6820**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1748	42.4837	22.1789	0.0417	8.3310	2.1987	10.5298	4.5222	2.0228	6.5450	0.0000	4,139.6667	4,139.6667	1.1973	0.0000	4,164.6820
2021	14.5303	18.2681	17.4920	0.0312	0.2972	0.9616	1.2587	0.0800	0.9040	0.9840	0.0000	2,988.1215	2,988.1215	0.6380	0.0000	3,004.0708
Maximum	**14.5303**	**42.4837**	**22.1789**	**0.0417**	**8.3310**	**2.1987**	**10.5298**	**4.5222**	**2.0228**	**6.5450**	**0.0000**	**4,139.6667**	**4,139.6667**	**1.1973**	**0.0000**	**4,164.6820**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.52**	**0.00**	**45.74**	**54.27**	**0.00**	**42.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514
Energy	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Mobile	0.4125	3.0067	4.9543	0.0194	1.5131	0.0148	1.5279	0.4049	0.0139	0.4188		1,976.3389	1,976.3389	0.1081		1,979.0423
Total	**7.1189**	**3.6541**	**18.0338**	**0.0491**	**1.5131**	**1.7191**	**3.2322**	**0.4049**	**1.7182**	**2.1231**	**206.0722**	**2,592.5662**	**2,798.6385**	**0.7300**	**0.0180**	**2,822.2421**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514
Energy	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Mobile	0.4125	3.0067	4.9543	0.0194	1.5131	0.0148	1.5279	0.4049	0.0139	0.4188		1,976.3389	1,976.3389	0.1081		1,979.0423
Total	**7.1189**	**3.6541**	**18.0338**	**0.0491**	**1.5131**	**1.7191**	**3.2322**	**0.4049**	**1.7182**	**2.1231**	**206.0722**	**2,592.5662**	**2,798.6385**	**0.7300**	**0.0180**	**2,822.2421**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/13/2020	8/19/2020	5	5	
2	Grading	Grading	8/20/2020	8/31/2020	5	8	
3	Building Construction	Building Construction	9/1/2020	7/19/2021	5	230	
4	Paving	Paving	7/20/2021	8/12/2021	5	18	
5	Architectural Coating	Architectural Coating	8/13/2021	9/7/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.78

Residential Indoor: 80,190; Residential Outdoor: 26,730; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,039 (Architectural Coating – sqft)

OffRoad Equipment

Cedar Villas - San Bernardino-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	110.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	22.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0983	0.0663	0.6653	1.8300e-003	0.2012	1.3200e-003	0.2025	0.0534	1.2100e-003	0.0546		182.4750	182.4750	5.4500e-003		182.6112
Total	**0.0983**	**0.0663**	**0.6653**	**1.8300e-003**	**0.2012**	**1.3200e-003**	**0.2025**	**0.0534**	**1.2100e-003**	**0.0546**		**182.4750**	**182.4750**	**5.4500e-003**		**182.6112**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0983	0.0663	0.6653	1.8300e-003	0.2012	1.3200e-003	0.2025	0.0534	1.2100e-003	0.0546		182.4750	182.4750	5.4500e-003		182.6112
Total	**0.0983**	**0.0663**	**0.6653**	**1.8300e-003**	**0.2012**	**1.3200e-003**	**0.2025**	**0.0534**	**1.2100e-003**	**0.0546**		**182.4750**	**182.4750**	**5.4500e-003**		**182.6112**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5648	0.0000	6.5648	3.3694	0.0000	3.3694			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5648**	**1.2734**	**7.8382**	**3.3694**	**1.1716**	**4.5409**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0893	3.4051	0.5719	0.0105	0.2406	0.0102	0.2509	0.0660	9.7900e-003	0.0758		1,115.1191	1,115.1191	0.0671		1,116.7954
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0553	0.5544	1.5300e-003	0.1677	1.1000e-003	0.1688	0.0445	1.0100e-003	0.0455		152.0625	152.0625	4.5400e-003		152.1760
Total	**0.1712**	**3.4604**	**1.1263**	**0.0120**	**0.4083**	**0.0113**	**0.4196**	**0.1104**	**0.0108**	**0.1212**		**1,267.1816**	**1,267.1816**	**0.0716**		**1,268.9714**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9542	0.0000	2.9542	1.5162	0.0000	1.5162			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**2.9542**	**1.2734**	**4.2276**	**1.5162**	**1.1716**	**2.6878**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0893	3.4051	0.5719	0.0105	0.2406	0.0102	0.2509	0.0660	9.7900e-003	0.0758		1,115.1191	1,115.1191	0.0671		1,116.7954
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0553	0.5544	1.5300e-003	0.1677	1.1000e-003	0.1688	0.0445	1.0100e-003	0.0455		152.0625	152.0625	4.5400e-003		152.1760
Total	**0.1712**	**3.4604**	**1.1263**	**0.0120**	**0.4083**	**0.0113**	**0.4196**	**0.1104**	**0.0108**	**0.1212**		**1,267.1816**	**1,267.1816**	**0.0716**		**1,268.9714**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0256	0.8374	0.1907	2.0900e-003	0.0512	3.9300e-003	0.0552	0.0148	3.7600e-003	0.0185		220.0001	220.0001	0.0164		220.4110
Worker	0.1201	0.0811	0.8132	2.2400e-003	0.2459	1.6100e-003	0.2475	0.0652	1.4800e-003	0.0667		223.0250	223.0250	6.6600e-003		223.1914
Total	**0.1458**	**0.9185**	**1.0039**	**4.3300e-003**	**0.2972**	**5.5400e-003**	**0.3027**	**0.0800**	**5.2400e-003**	**0.0852**		**443.0250**	**443.0250**	**0.0231**		**443.6024**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0256	0.8374	0.1907	2.0900e-003	0.0512	3.9300e-003	0.0552	0.0148	3.7600e-003	0.0185		220.0001	220.0001	0.0164		220.4110
Worker	0.1201	0.0811	0.8132	2.2400e-003	0.2459	1.6100e-003	0.2475	0.0652	1.4800e-003	0.0667		223.0250	223.0250	6.6600e-003		223.1914
Total	**0.1458**	**0.9185**	**1.0039**	**4.3300e-003**	**0.2972**	**5.5400e-003**	**0.3027**	**0.0800**	**5.2400e-003**	**0.0852**		**443.0250**	**443.0250**	**0.0231**		**443.6024**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0220	0.7633	0.1698	2.0700e-003	0.0512	1.3600e-003	0.0526	0.0148	1.3000e-003	0.0161		218.8281	218.8281	0.0160		219.2268
Worker	0.1120	0.0727	0.7470	2.1700e-003	0.2459	1.5700e-003	0.2475	0.0652	1.4500e-003	0.0667		215.9295	215.9295	6.0100e-003		216.0798
Total	**0.1340**	**0.8360**	**0.9168**	**4.2400e-003**	**0.2972**	**2.9300e-003**	**0.3001**	**0.0800**	**2.7500e-003**	**0.0827**		**434.7576**	**434.7576**	**0.0220**		**435.3065**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0220	0.7633	0.1698	2.0700e-003	0.0512	1.3600e-003	0.0526	0.0148	1.3000e-003	0.0161		218.8281	218.8281	0.0160		219.2268
Worker	0.1120	0.0727	0.7470	2.1700e-003	0.2459	1.5700e-003	0.2475	0.0652	1.4500e-003	0.0667		215.9295	215.9295	6.0100e-003		216.0798
Total	**0.1340**	**0.8360**	**0.9168**	**4.2400e-003**	**0.2972**	**2.9300e-003**	**0.3001**	**0.0800**	**2.7500e-003**	**0.0827**		**434.7576**	**434.7576**	**0.0220**		**435.3065**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0940	10.8399	12.2603	0.0189		0.5788	0.5788		0.5342	0.5342		1,804.5523	1,804.5523	0.5670		1,818.7270
Paving	0.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1769**	**10.8399**	**12.2603**	**0.0189**		**0.5788**	**0.5788**		**0.5342**	**0.5342**		**1,804.5523**	**1,804.5523**	**0.5670**		**1,818.7270**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1018	0.0661	0.6791	1.9700e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		196.2995	196.2995	5.4600e-003		196.4361
Total	**0.1018**	**0.0661**	**0.6791**	**1.9700e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**196.2995**	**196.2995**	**5.4600e-003**		**196.4361**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0940	10.8399	12.2603	0.0189		0.5788	0.5788		0.5342	0.5342	0.0000	1,804.5523	1,804.5523	0.5670		1,818.7270
Paving	0.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1769**	**10.8399**	**12.2603**	**0.0189**		**0.5788**	**0.5788**		**0.5342**	**0.5342**	**0.0000**	**1,804.5523**	**1,804.5523**	**0.5670**		**1,818.7270**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1018	0.0661	0.6791	1.9700e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		196.2995	196.2995	5.4600e-003		196.4361
Total	**0.1018**	**0.0661**	**0.6791**	**1.9700e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**196.2995**	**196.2995**	**5.4600e-003**		**196.4361**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.2910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**14.5099**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0204	0.0132	0.1358	3.9000e-004	0.0447	2.9000e-004	0.0450	0.0119	2.6000e-004	0.0121		39.2599	39.2599	1.0900e-003		39.2872
Total	**0.0204**	**0.0132**	**0.1358**	**3.9000e-004**	**0.0447**	**2.9000e-004**	**0.0450**	**0.0119**	**2.6000e-004**	**0.0121**		**39.2599**	**39.2599**	**1.0900e-003**		**39.2872**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.2910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**14.5099**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0204	0.0132	0.1358	3.9000e-004	0.0447	2.9000e-004	0.0450	0.0119	2.6000e-004	0.0121		39.2599	39.2599	1.0900e-003		39.2872
Total	**0.0204**	**0.0132**	**0.1358**	**3.9000e-004**	**0.0447**	**2.9000e-004**	**0.0450**	**0.0119**	**2.6000e-004**	**0.0121**		**39.2599**	**39.2599**	**1.0900e-003**		**39.2872**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4125	3.0067	4.9543	0.0194	1.5131	0.0148	1.5279	0.4049	0.0139	0.4188		1,976.3389	1,976.3389	0.1081		1,979.0423
Unmitigated	0.4125	3.0067	4.9543	0.0194	1.5131	0.0148	1.5279	0.4049	0.0139	0.4188		1,976.3389	1,976.3389	0.1081		1,979.0423

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	207.68	207.68	207.68	709,674	709,674
Total	207.68	207.68	207.68	709,674	709,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Non-Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Single Family Housing	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
NaturalGas Unmitigated	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1844.15	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Total		**0.0199**	**0.1700**	**0.0723**	**1.0800e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**		**216.9590**	**216.9590**	**4.1600e-003**	**3.9800e-003**	**218.2483**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.84415	0.0199	0.1700	0.0723	1.0800e-003		0.0137	0.0137		0.0137	0.0137		216.9590	216.9590	4.1600e-003	3.9800e-003	218.2483
Total		**0.0199**	**0.1700**	**0.0723**	**1.0800e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**		**216.9590**	**216.9590**	**4.1600e-003**	**3.9800e-003**	**218.2483**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514
Unmitigated	6.6865	0.4775	13.0072	0.0286		1.6906	1.6906		1.6906	1.6906	206.0722	399.2683	605.3405	0.6177	0.0140	624.9514

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7961					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.7648	0.4565	11.1881	0.0285		1.6805	1.6805		1.6805	1.6805	206.0722	396.0000	602.0722	0.6146	0.0140	621.6039
Landscaping	0.0551	0.0210	1.8191	1.0000e-004		0.0100	0.0100		0.0100	0.0100		3.2683	3.2683	3.1700e-003		3.3475
Total	**6.6865**	**0.4775**	**13.0072**	**0.0286**		**1.6906**	**1.6906**		**1.6906**	**1.6906**	**206.0722**	**399.2683**	**605.3405**	**0.6177**	**0.0140**	**624.9514**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7961					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.7648	0.4565	11.1881	0.0285		1.6805	1.6805		1.6805	1.6805	206.0722	396.0000	602.0722	0.6146	0.0140	621.6039
Landscaping	0.0551	0.0210	1.8191	1.0000e-004		0.0100	0.0100		0.0100	0.0100		3.2683	3.2683	3.1700e-003		3.3475
Total	**6.6865**	**0.4775**	**13.0072**	**0.0286**		**1.6906**	**1.6906**		**1.6906**	**1.6906**	**206.0722**	**399.2683**	**605.3405**	**0.6177**	**0.0140**	**624.9514**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B
BIOLOGICAL RESOURCES ASSESSMENT

47 1st Street, Suite 1
Redlands, CA 92373-4601
(909) 915-5900

August 22, 2019

Cheryl A. Tubbs, Vice President
Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408

RE: Biological Resources Assessment and Jurisdictional Delineation
Monte Vista Homes- Cedar Villas Bloomington
City of Rialto, CA

Dear Cheryl:

Jericho Systems, Inc. (Jericho) is pleased to provide this letter report that details the results of a general Biological Resources Assessment (BRA) that includes habitat suitability assessments for nesting birds, Burrowing owl (*Athene cunicularia*) [BUOW] and a Jurisdictional Waters Delineation (JD) for the proposed parcels in the along Cedar Avenue and between Church Street and S. Vine Avenue in the City of Rialto, CA.

This report is designed to address potential effects of any development to designated Critical Habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA), or species designated as sensitive by the California Department of Fish and Wildlife (CDFW), or the California Native Plant Society (CNPS). Attention was focused sensitive species known to occur locally. This report also addresses resources protected under the Migratory Bird Treaty Act, federal Clean Water Act (CWA) regulated by the U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB); and Section 1602 of the California Fish and Game Code (FCG) administered by the CDFW.

SITE LOCATION

The Project site is in the City of Rialto, in San Bernardino County, approximately 0.75-mile north of the Interstate 10 (I-10) Freeway and approximately 1.8 miles south of Route 66. It is in the *Fontana* USGS quad in Township 1 South, Range 5 West, and Section 15. The Project site is a vacant and unimproved rectangular-shaped plot bound by Cedar Avenue on the west and is located at the address 9587 Cedar Avenue. The site is bound by existing housing on the north, east, and south. The closest street north of the project site is West Woodcrest Street, south is West Miramont Street, and east is South Church Avenue.

ENVIRONMENTAL SETTING

The site is a rectangular/square shape of vacant and unimproved land on approximately 3.17-acres (APNs: 0250-091-25 & 26). The land has been graded and is completely surrounded by residential development on all sides.

The surrounding local area is bordered on the southeast by the Santa Ana River and the Jurupa Mountains on the southwest. The community of Bloomington includes approximately 6.7 square miles of unincorporated area north of the San Bernardino/Riverside County line and is adjacent to the City of Fontana on the west and north, and the City of Rialto on the north and east. The subject parcel is situated in a developing area of the Inland Valleys ecoregion.

Hydrologically, the Project site is located within the Middle Santa Ana River hydrologic area, in the Chino (Split) hydrologic sub-area (HSA 801.21), which is a 190515-acre area within the Middle Santa Ana River watershed (HUC 180702030804). Soils in this area consist entirely of Tujunga loamy sand, 0 to 5 percent slopes.

METHODS

As stated above, the objective of this document is to determine whether the Project area supports special status or otherwise sensitive species and/or their habitat, and to address the potential effects associated with the Proposed project on those resources. The species and habitats addressed in this document are based on database information and field investigation.

Prior to conducting the field study, species and habitat information was gathered from the reports related to the specific project and relevant databases for the *Fontana* USGS quadrangle to determine which species and/or habitats would be expected to occur on site. These sources include:

- U.S. Fish and Wildlife (USFWS) threatened and endangered species occurrence GIS overlay;
- USFWS Information for Planning and Consultation System (IPaC);
- California Natural Diversity Database (CNDDB) *Rarefind 5*;
- CNDDB Biogeographic Information and Observation System (BIOS);
- California Native Plant Society Electronic Inventory (CNPSEI) database;
- Calflora Database;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey;
- USFWS National Wetland Inventory;
- Environmental Protection Agency (EPA) Water Program "My Waters" data layers
- USFWS Designated Critical Habitat Maps

We also reviewed other available technical information on the biological resources of the site, including previous trapping surveys and discussed recent findings with researchers in the field.

Jericho biologist Christian Nordal conducted a general biological resources assessment on July 10, 2019, with an emphasis on special-status species known to occur in the area. Mr. Nordal has advanced degrees and multiple years of experience surveying biological resources within Southern California.

Mr. Nordal conducted the systematic and comprehensive survey with complete coverage of the entire site and adjacent areas (when appropriate and feasible). The survey was conducted during the morning peak animal activity hours between the hours of 6:00 a.m. and 10:30 a.m. Weather was clear, calm and warm with an average temperature of 76°F and winds of less than 5 MPH

During the site assessment, Mr. Nordal examined natural and non-natural substrates for burrows to determine size, shape, and aspect as well as if any animal sign (molted feathers, cast pellets, prey remains,

and owl whitewash) was present. The subject parcel was also assessed for soil type and level of friability as well as habitat type and habitat structure.

Wildlife species were detected during field surveys by sight, calls, tracks, scat, or other sign. In addition to species observed, expected wildlife usage of the site was determined per known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. The focus of the faunal species surveys was to identify potential habitat for special status wildlife within the project area. Disturbance characteristics and all animal sign encountered on the site are recorded in the results section.

The site was also evaluated for the presence of jurisdictional waters, i.e. waters of the U.S. as regulated by the USACE and RWQCB, and/or streambed and associated riparian habitat as regulated by the CDFW. Evaluation of potential federal jurisdiction followed the regulations set forth in 33CFR part 328 and the USACE guidance documents and evaluation of potential State jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (CDFW, 2010).

RESULTS

The database searches identified 35 sensitive species (16 plant, 16 vertebrate, 3 invertebrate) and 1 sensitive habitat within the *Fontana* USGS 7.5-minute series quadrangle. A full summary of these results is outlined in Attachment A. The database searches indicated that no State- and/or federally-listed threatened or endangered species are documented in the immediate vicinity of the project site.

Habitat on site consists of invasive annual grassland that includes wildoats (*Avena fatua*), slim oat (*Avena barbata*), and ripgut brome (*Bromus diandrus*). Sporadic perennials exist throughout the parcels, including hairy leaved sunflower (*Helianthus annuus*),

Wildlife species observed or otherwise detected on site during the surveys included: mourning dove, black phoebe (*Sayornis nigricans*), lesser goldfinch (*Spinus psaltria*), California towhee (*Melozone fusca*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*). No burrows were found throughout the site including ground squirrel burrows or gopher holes.

<u>*Burrowing owl (BUOW)*</u>

The Burrowing owl [BUOW] is a small, ground-dwelling owl that is protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5) as a Species of Special Concern. In southern California, BUOW can be found in grassland, shrub steppe, and desert habitat types consisting of short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils. They can also be found in agricultural areas, ruderal fields, vacant lots and pastures, and flood control facilities. Most importantly, BUOWs require underground burrows or other cavities for nesting, roosting and shelter. Burrows used by the owls are usually dug by other species, termed host burrowers. In California, California ground squirrel (*Spermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) burrows are frequently used by BUOW but they may use dens or holes dug by other fossorial species. They are active during the day and night, generally observed in the early morning hours or at twilight. The breeding season for BUOW is February 1 through August 31.

Per the definition provided in the *2012 CDFG Staff Report on Burrowing Owl Mitigation*, "Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils,

and abundant and available prey." Due to the dense grass load on the Project site, there is a low potential for occurrence of BUOW. This species is not typically associated with dense grasses, such as are the conditions found on site.

Therefore, the project site and immediate vicinity does not contain suitable habitat for this species for the following reasons:

- *Vegetation is not sparse or low to the ground*
- *No burrows were observed on the site including small mammal burrows, gopher holes or ground squirrel burrows.*
- *Presence of predators (coyote)*

No evidence of BUOW was found in the survey area. There was no sign of historic or current use of BUOW i.e. no BUOW pellets, feathers or whitewash, no burrows, and no ground squirrels or other fossorial animals to provide surrogate burrows. Additionally, no BUOW have been documented within a 3-mile radius of the subject parcel. Therefore, BUOW are, at the time of this report, considered absent from the site.

Nesting Birds and Raptors

The site is suitable for use by raptors for foraging purposes. The project site and immediate surrounding areas do contain habitat suitable for nesting birds in general, including the shrubs on site.

Nesting birds are protected under the MBTA which provides protection for nesting birds that are both residents and migrants whether they are considered sensitive by resource agencies. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

Jurisdiction Waters

There are no drainages on site. No aspect of the site presents any evidence of jurisdictional waters. None of the following indicators are present on site: riparian vegetation, facultative, facultative wet or obligate wet vegetation, harrow marks, sand bars shaped by water, racking, rilling, destruction of vegetation, defined bed and bank, distinct line between vegetation types, clear natural scour line, meander bars, mud cracks, staining, silt deposits, litter- organic debris. No jurisdictional waters occur on site.

CONCLUSIONS AND RECOMMENDATIONS

There is very low potential for BUOW due to the lack of suitable habitat. Further investigation is not recommended or warranted.

Nesting Birds

The vegetation on site does have a potential to support nesting birds and foraging raptors such as red-tailed hawks. Therefore, to reduce the potential impacts to nesting birds, the following is recommended:

> Bird nesting season generally extends from February 1 through September 15 in southern California and specifically, April 15 through August 31 for migratory passerine birds. To avoid impacts to nesting birds (common and special status) during the nesting season, a qualified Avian Biologist will conduct pre-construction Nesting Bird Surveys (NBS) prior to project-related disturbance to nestable vegetation to identify any active nests. If no active nests are found, no further action will be required.
>
> If an active nest is found, the biologist will set appropriate no-work buffers around the nest which will be based upon the nesting species, its sensitivity to disturbance, nesting stage and expected types, intensity and duration of disturbance. The nests and buffer zones shall be field checked weekly by a qualified biological monitor. The approved no-work buffer zone shall be clearly marked in the field, within which no disturbance activity shall commence until the qualified biologist has determined the young birds have successfully fledged and the nest is inactive.

Please do not hesitate to contact me at 909-915-5900 should you have any questions or require further information.

Sincerely,

Shay Lawrey, President
Ecologist/Regulatory Specialist

Attachments:

Attachment A – Table of Documented Occurrences
Attachment B – Figures
Attachment C – Site Photos

ATTACHMENT A – TABLE OF DOCUMENTED OCCURRENCES

Attachment A – Table of Database Queries (CNDDB, IPAC, CNPSEI)

Scientific Name	Common Name	Federal Status State Status Other Statuses	Habitats	Potential To Occur
Plants				
Ambrosia pumila	San Diego ambrosia	Endangered None 1B.1	Sandy loam or clay, often in disturbed alkaline soils within chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Found on the upper terraces of streams and vernal pools.	No mesic areas occur on the project site. Potential to occur is low.
Arenaria paludicola	marsh sandwort	Endangered Endangered 1B.1	Freshwater marsh | Marsh & swamp | Wetland Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m.	No wetlands occur on the project site. Potential to occur is low.
Calochortus plummerae	Plummer's mariposa-lily	None None 4.2	Chaparral | Cismontane woodland | Coastal scrub | Lower montane coniferous forest | Valley & foothill grassland Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 60-2500 m.	Exotic grassland occurs on the project site isolated by development. The plot of land has been graded and historic seed banks are not likely to occur. Potential to occur is low.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	Endangered Endangered 1B.2	Coastal dunes | Marsh & swamp | Salt marsh | Wetland Limited to the higher zones of salt marsh habitat. 0-10 m.	No wetland habitat occurs on site. Potential to occur is low
Chorizanthe parryi var. *parryi*	Parry's spineflower	None None 1B.1 | BLM Sensitive | USFS Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland Dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland. Dry, sandy soils. 90-1220 m.	Exotic grassland occurs on the project site isolated by development. The plot of land has been graded and historic seed banks are not likely to occur. Potential to occur is low.
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar	Endangered Endangered 1B.1	Chaparral | Coastal scrub Coastal scrub, chaparral. In sandy soils on river floodplains or terraced fluvial deposits. 180-705 m.	No river floodplains or fluvial deposits are on site. Potential to occur is low.
Horkelia cuneata var. *puberula*	mesa horkelia	None None 1B.1 | USFS Sensitive	Chaparral | Cismontane woodland | Coastal scrub Sandy or gravelly sites. 15-1645 m.	Chaparral, cismontane woodland, or coastal scrub habitats are not on site. Potential to occur is low.

Scientific Name	Common Name	Federal Status State Status Other Statuses	Habitats	Potential To Occur
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None None 4.3	Chaparral | Coastal scrub Dry soils, shrubland. 4-1435 m.	Chaparral or coastal scrub is not on site. Potential to occur is low.
Lycium parishii	Parish's desert-thorn	None None 2B.3	Coastal scrub | Sonoran desert scrub -3-570 m.	Coastal scrub or Sonoran desert scrub is not on site. Potential to occur is low.
Malacothamnus parishii	Parish's bush-mallow	None None 1A	Chaparral | Coastal scrub In a wash. 305-455 m.	Chaparral and coastal scrub is not present on site. Potential to occur is low.
Monardella pringlei	Pringle's monardella	None None 1A	Coastal scrub Sandy hills. 300-400 m.	Coastal scrub is not on site. Potential to occur is low.
Senecio aphanactis	chaparral ragwort	None None 2B.2	Chaparral | Cismontane woodland | Coastal scrub Drying alkaline flats. 20-855 m.	Chaparral, cismontane woodland, or coastal scrub is not on site. Potential to occur is low.
Sphenopholis obtusata	prairie wedge grass	None None 2B.2	Cismontane woodland | Meadow & seep | Wetland Open moist sites, along rivers and springs, alkaline desert seeps. 15-2625 m.	Wet sites are not present on the project site. Potential to occur is low.
Symphyotrichum defoliatum	San Bernardino aster	None None 1B.2 | BLM Sensitive | USFS Sensitive	Cismontane woodland | Coastal scrub | Lower montane coniferous forest | Marsh & swamp | Meadow & seep | Valley & foothill grassland Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 3-2045 m.	No mesic sites are present on the project site. Potential to occur is low.
Berberis nevinii	Nevin's barberry	Endangered Endangered 1B.1	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub sandy or gravelly 70-825 m	Chaparral, cismontane woodland, coastal scrub, or riparian scrub is not on site. Potential to occur is low.
Deinandra paniculata	paniculate tarplant	None None 4.2	Coastal scrub, Valley and foothill grassland, Vernal pools usually vernally mesic, sometimes sandy 25-940 m	Mesic sites are not present on the project site. Potential to occur is low.
Birds				
Agelaius tricolor	tricolored blackbird	None Threatened	Freshwater marsh | Marsh & swamp | Swamp | Wetland	No wetland habitats occur on site. Potential to occur is low.

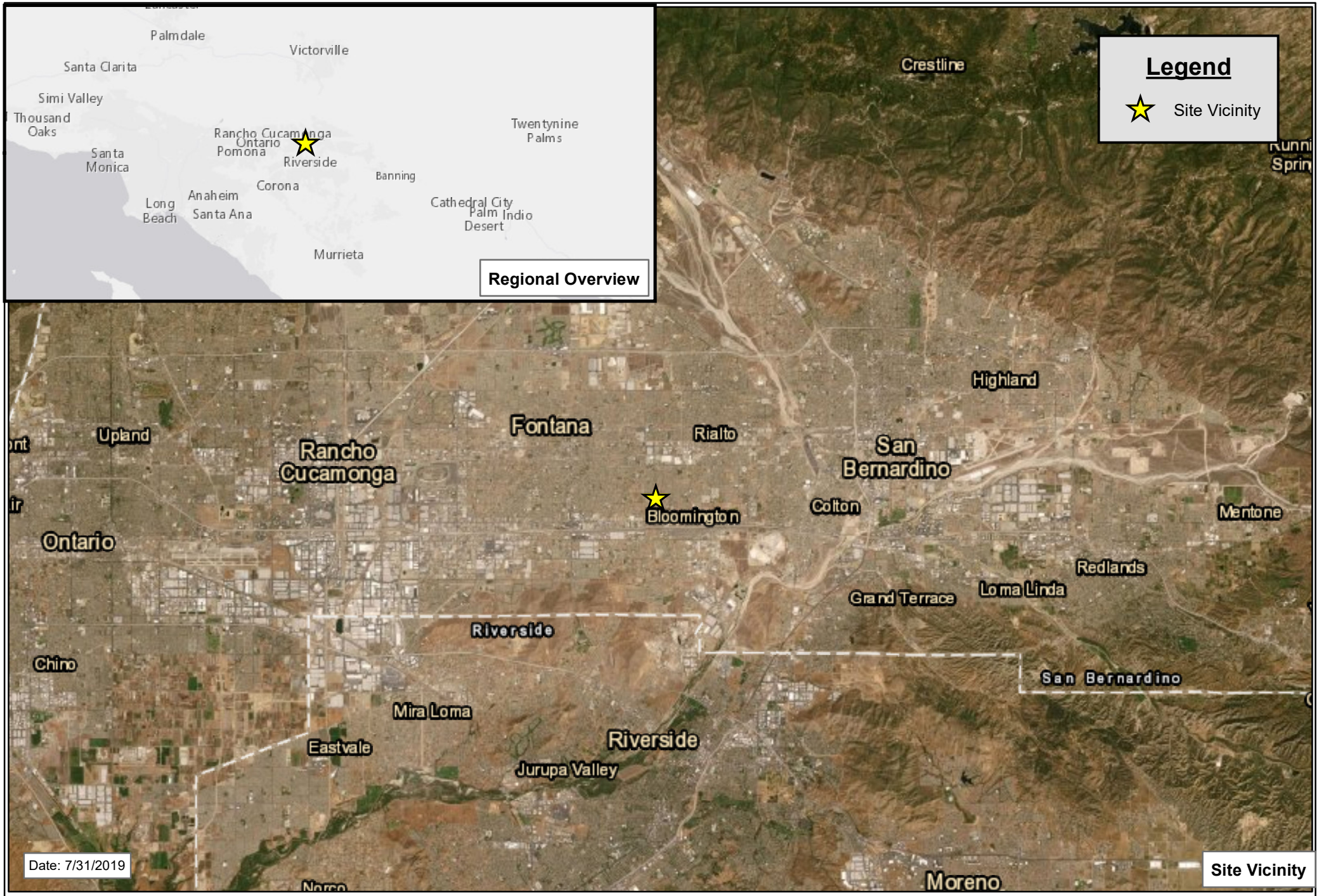
Scientific Name	Common Name	Federal Status State Status Other Statuses	Habitats	Potential To Occur
		BLM Sensitive | CDFW SSC | IUCN Endangered | NABCI Red Watch List | USFWS BCC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	
Athene cunicularia	burrowing owl	None None BLM Sensitive | CDFW SSC | IUCN Least Concern | USFWS BCC	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Grasses on site are dense and burrows are not present on the project site. Potential to occur is low.
Empidonax traillii extimus	Southwestern willow flycatcher	Endangered Endangered	Riparian; multiple canopy layers with slow-flowing waters	Riparian habitat is not on site. Potential to occur is low.
Polioptila californica californica	coastal California gnatcatcher	Threatened None CDFW SSC | NABCI Yellow Watch List	Coastal bluff scrub | Coastal scrub Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Coastal scrub is not present on site. Potential to occur is low.
Vireo bellii pusillus	least Bell's vireo	Endangered Endangered IUCN Near Threatened | NABCI Yellow Watch List	Riparian forest | Riparian scrub | Riparian woodland Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Riparian habitat is not present on site. Potential to occur is low.
Mammals				
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None None CDFW SSC	Chaparral | Coastal scrub Coastal scrub, chaparral, grasslands, sagebrush, etc. in western San Diego County.	Parcel is surrounded by development and does not have rocky outcroppings. Potential to occur is low.

Scientific Name	Common Name	Federal Status State Status Other Statuses	Habitats	Potential To Occur
			Sandy, herbaceous areas, usually in association with rocks or coarse gravel. Rarely found in cities.	
Dipodomys merriami parvus	San Bernardino kangaroo rat	Endangered None CDFW SSC	Coastal scrub Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains. Needs early to intermediate seral stages.	Coastal/alluvial scrub habitat is not on site. Potential to occur is low.
Lasiurus xanthinus	western yellow bat	None None CDFW SSC | IUCN Least Concern | WBWG High Priority	Desert wash Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Desert wash and palms are not present on site. Potential to occur is low.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None None CDFW SSC	Coastal scrub Intermediate canopy stages of shrub habitats & open shrub / herbaceous & tree / herbaceous edges. Coastal sage scrub habitats in Southern California.	Species utilizes a variety of habitats. Potential to occur is moderate.
Nyctinomops femorosaccus	pocketed free-tailed bat	None None CDFW SSC | IUCN Least Concern | WBWG Medium Priority	Joshua tree woodland | Pinon & juniper woodlands | Riparian scrub | Sonoran desert scrub Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	Rocky areas for roosting are not present on site. Potential to occur is low.
Anniella stebbinsi	southern California legless lizard	None None CDFW SSC | USFS Sensitive	Broadleaved upland forest | Chaparral | Coastal dunes | Coastal scrub Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	Soils on site are not moist and are graded. Potential to occur is low.

Scientific Name	Common Name	Federal Status State Status Other Statuses	Habitats	Potential To Occur
Arizona elegans occidentalis	California glossy snake	None None CDFW SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Species is a habitat generalist. Potential to occur is moderate.
Phrynosoma blainvillii	coast horned lizard	None None BLM Sensitive | CDFW SSC | IUCN Least Concern	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Sandy washes with scattered shrub is not present on the project site. Potential to occur is low.
Insects				
Bombus crotchii	Crotch bumble bee	None None	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Nectar sources are not present on the project site. Potential to occur is low.
Cicindela tranquebarica viridissima	greenest tiger beetle	None None	Riparian woodland Inhabits the woodlands adjacent to the Santa Ana River basin. Usually found in open spots between trees.	Riparian woodland is not present on the project site. Potential to occur is low.
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	Endangered None	Interior dunes Found only in areas of the Delhi Sands formation in southwestern San Bernardino & northwestern Riverside counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes & sparse vegetation. Oviposition req. shade.	Sand dunes of the Delhi soils series are not present on site. Potential to occur is low.
Fish				
Catostomus santaanae	Santa Ana sucker	Threatened None	Aquatic | South coast flowing waters	No aquatic habitat on site. Potential to occur is none.

Scientific Name	Common Name	Federal Status State Status Other Statuses	Habitats	Potential To Occur
		AFS Threatened | IUCN Vulnerable	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	
Gila orcuttii	arroyo chub	None None AFS Vulnerable | CDFW SSC | USFS Sensitive	Aquatic | South coast flowing waters Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave & San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	No aquatic habitat on site. Potential to occur is none.
Oncorhynchus mykiss irideus pop. 10	steelhead - southern California DPS	Endangered None AFS Endangered	Aquatic | South coast flowing waters Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	No aquatic habitat on site. Potential to occur is none.
Habitats				
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	None None	Habitat is not present on site	

ATTACHMENT B
FIGURES



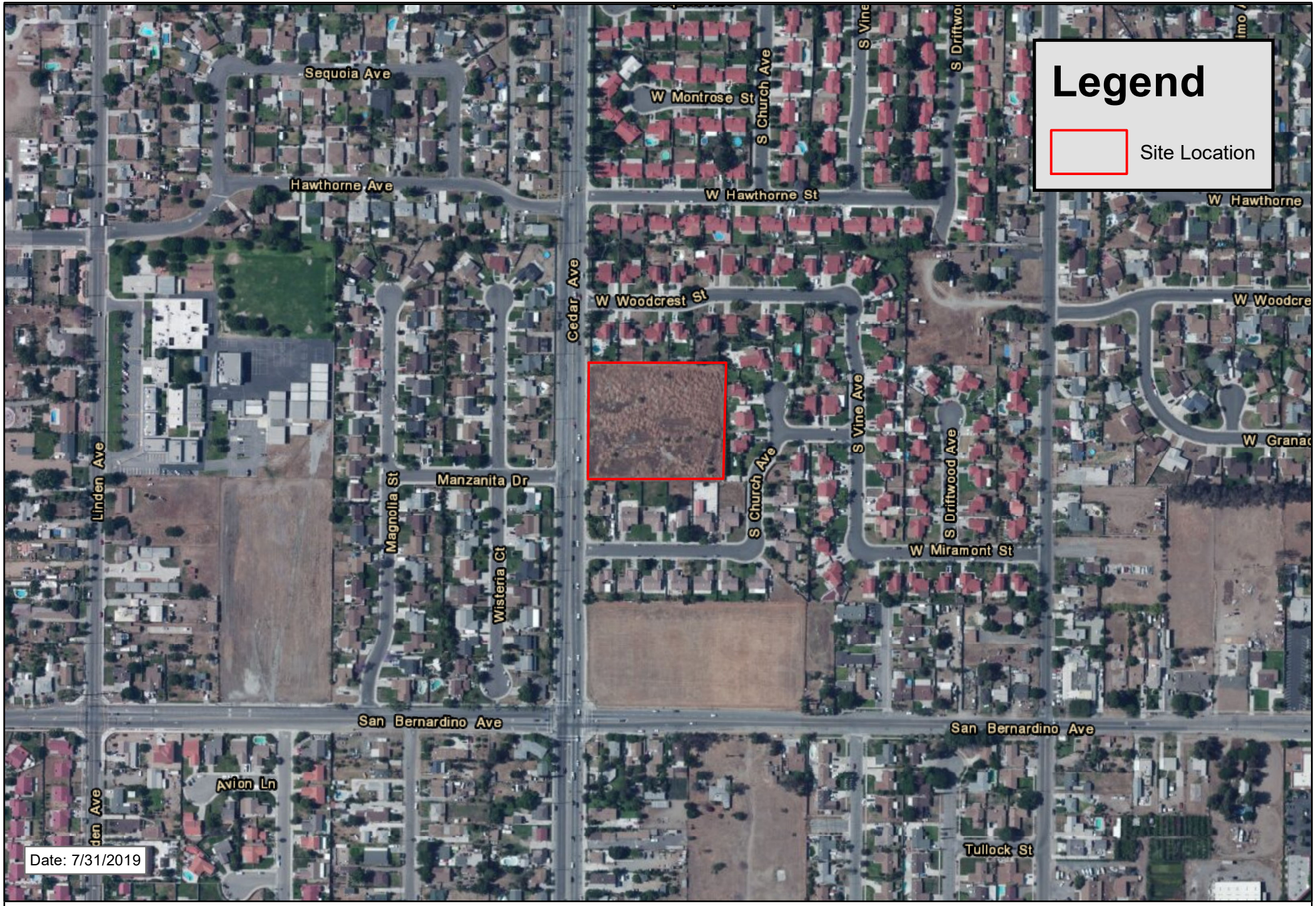
0 2 4 8 12 16 Miles

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

JERICHO SYSTEMS INCORPORATED

Figure 1
Regional Vicinity

Cedar Villas - Monte Vista
Lilburn Corporation



0 0.03 0.06 0.12 0.18 0.24 Miles

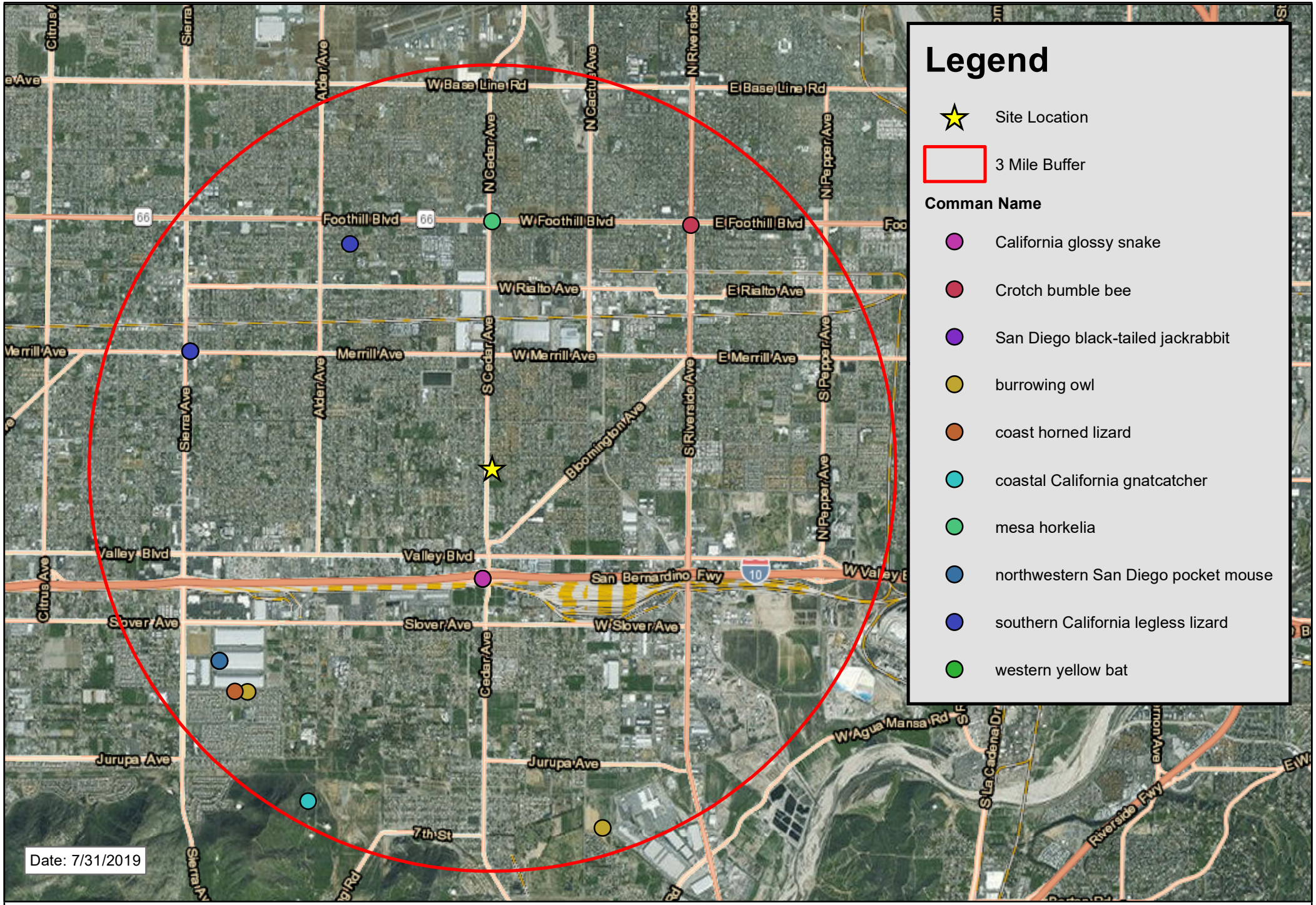
Imagery Date: 8/6/2017

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

JERICHO SYSTEMS INCORPORATED

1 inch = 333 feet

Figure 2 Site Location	Cedar Villas - Monte Vista Lilburn Corporation



0 0.45 0.9 1.8 2.7 3.6 Miles

Imagery Date: 8/6/2017

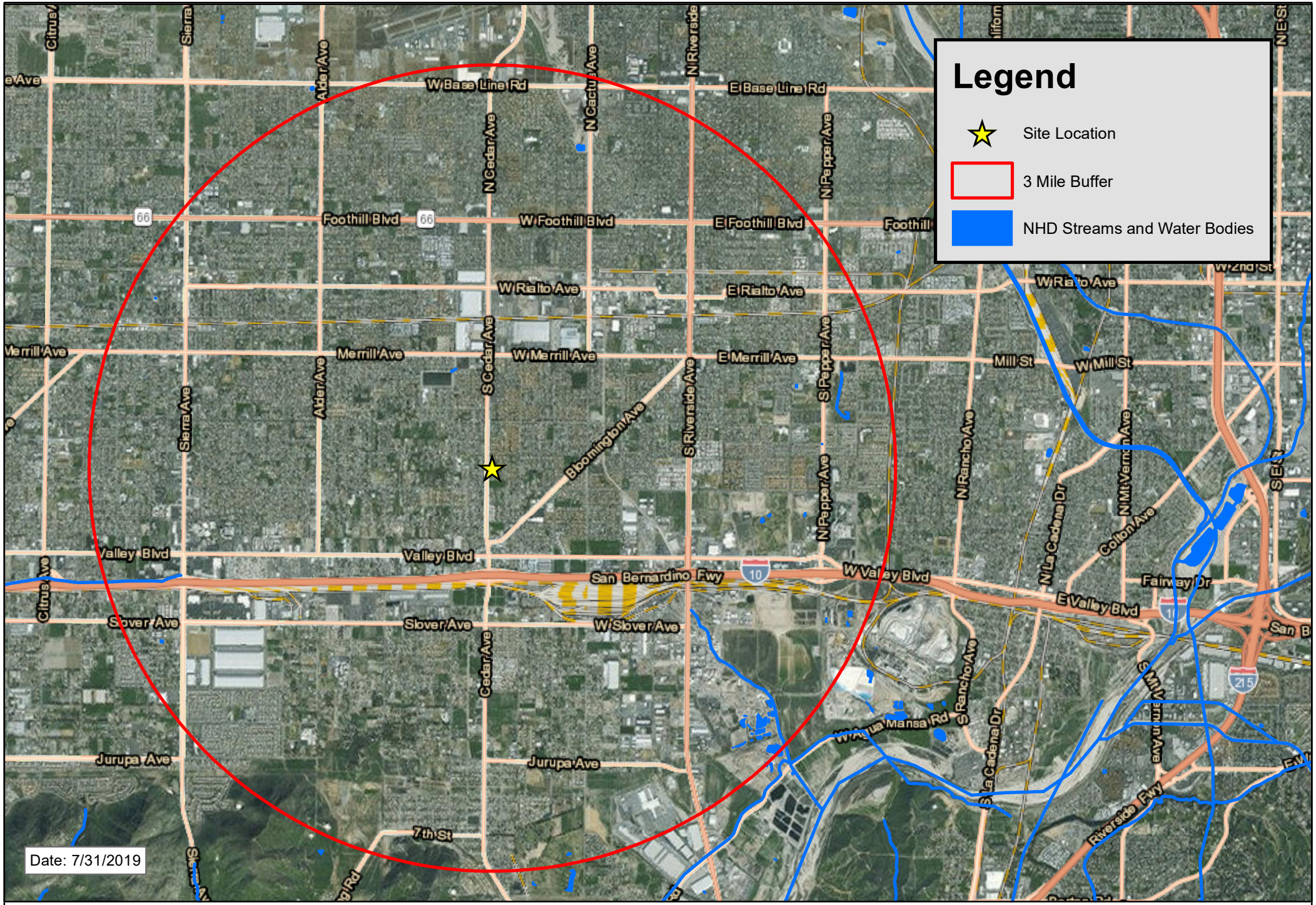
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

JERICHO SYSTEMS INCORPORATED

1 inch = 4,719 feet

Figure 3
3 Mile CNDDB

Cedar Villas - Monte Vista
Lilburn Corporation



0 0.45 0.9 1.8 2.7 3.6 Miles

Imagery Date: 8/6/2017

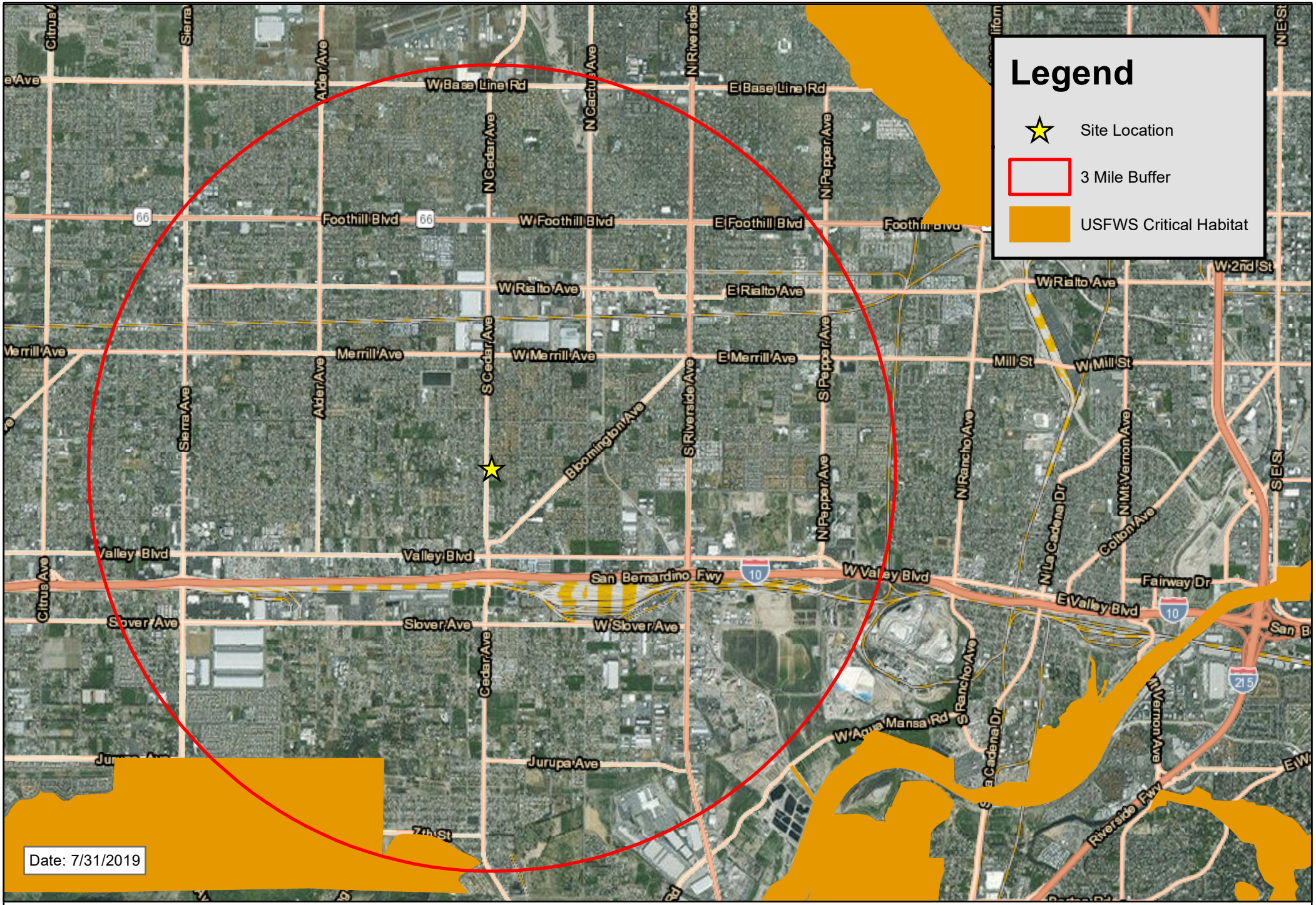
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

JERICHO SYSTEMS INCORPORATED

1 inch = 4,719 feet

Figure 4
National Hydrography Dataset (NHD)
Streams and Water Bodies

Cedar Villas - Monte Vista
Lilburn Corporation



0 0.45 0.9 1.8 2.7 3.6 Miles

Imagery Date: 8/6/2017

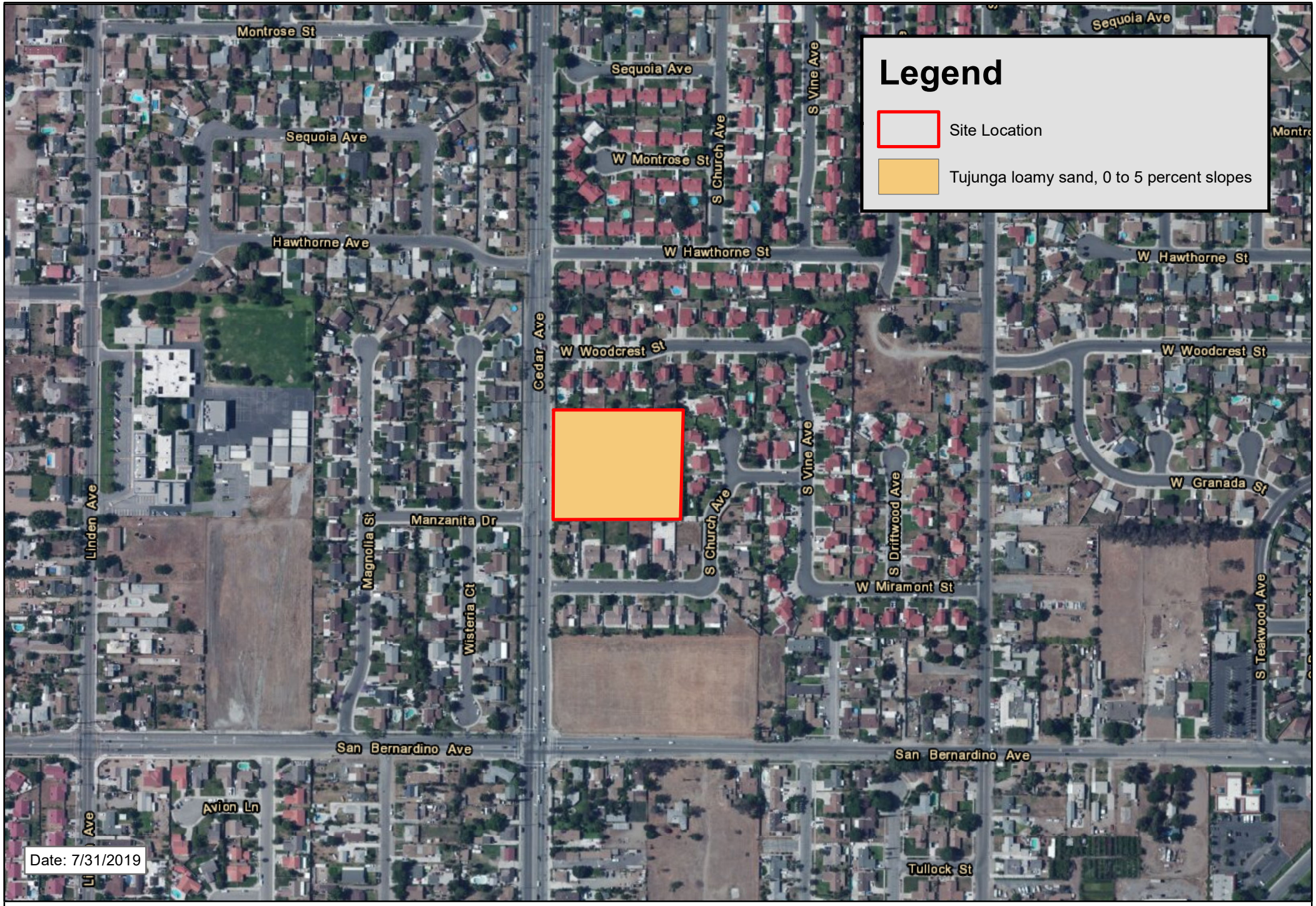
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

JERICHO SYSTEMS INCORPORATED

1 inch = 4,719 feet

Figure 5
USFWS Critical Habitat

Cedar Villas - Monte Vista
Lilburn Corporation



0 0.0325 0.065 0.13 0.195 0.26 Miles

Imagery Date: 8/6/2017

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

JERICHO SYSTEMS INCORPORATED

1 inch = 354 feet

Figure 6
Soils

Cedar Villas - Monte Vista
Lilburn Corporation

ATTACHMENT C
SITE PHOTOS

Cheryl A. Tubbs
BRA/JD – Monte Vista Cedar Villas- Bloomington
August 22, 2019

	
Photo 1. SE corner looking west	Photo 2. SW corner looking north.

	
Photo 3. View from the frontage across the site.	Photo 3a, Continuation of view from the frontage across the site.

APPENDIX C
CULTURAL RESOURCES INVESTIGATION

A PHASE I CULTURAL RESOURCES INVESTIGATION FOR THE PROPOSED CEDAR VILLAS RESIDENTIAL DEVELOPMENT ON CEDAR AVENUE, CITY OF RIALTO, SAN BERNARDINO COUNTY, CALIFORNIA

- APN 0250-091-25 and -26 -

Prepared for:

LILBURN CORPORATION
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San Bernardino, California 92408

Prepared by:

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Author and Principal Investigator: Jeanette A. McKenna, MA/RPA/HonDL

Job No. 07-19-08-2014
August 25, 2019

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A PHASE I CULTURAL RESOURCES INVESTIGATION FOR THE PROPOSED CEDAR VILLAS RESIDENTIAL DEVELOPMENT ON CEDAR AVENUE, CITY OF RIALTO, SAN BERNARDINO COUNTY, CALIFORNIA

- APN 0250-091-25 and -26 -

by,

Jeanette A. McKenna, Principal
McKenna et al., Whittier CA

INTRODUCTION

McKenna et al. (Appendix A) initiated cultural resources investigations of the proposed Cedar Villas residential development in the City of Rialto, San Bernardino County, California (APNs 0250-091-25 and -26), at the request of Lilburn Corporation, San Bernardino, California (representing Monte Vista Homes). This investigation was initiated in early July, 2019, and completed in late August, 2019. This study has been completed for compliance with the California Environmental Quality Act (CEQA), as amended, the San Bernardino County policies and guidelines, and the local City of Rialto policies and guidelines. The project area, located on the north side of the I-10 freeway alignment and north of San Bernardino Avenue; on the east side of Cedar Avenue, Rialto, and consists of approximately 3.17 acres of vacant land.

PROJECT LOCATION AND DESCRIPTION

The proposed project involves the development of a residential complex on a 3.17 acre property on the east side of Cedar Avenue, north of San Bernardino Avenue. This property is located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15 (Figures 1-3). Illustrated in Figure 4, this property is currently surrounded with modern residential developments and represents one of the last areas of open space in the general area. The UTM coordinates for the four corners of this property were calculated in both NAD 27 and NAD 83 (Table 1). The property elevation averages 350 meters above mean sea level (1,148 feet AMSL) and is essentially flat and accessed from Cedar Avenue.

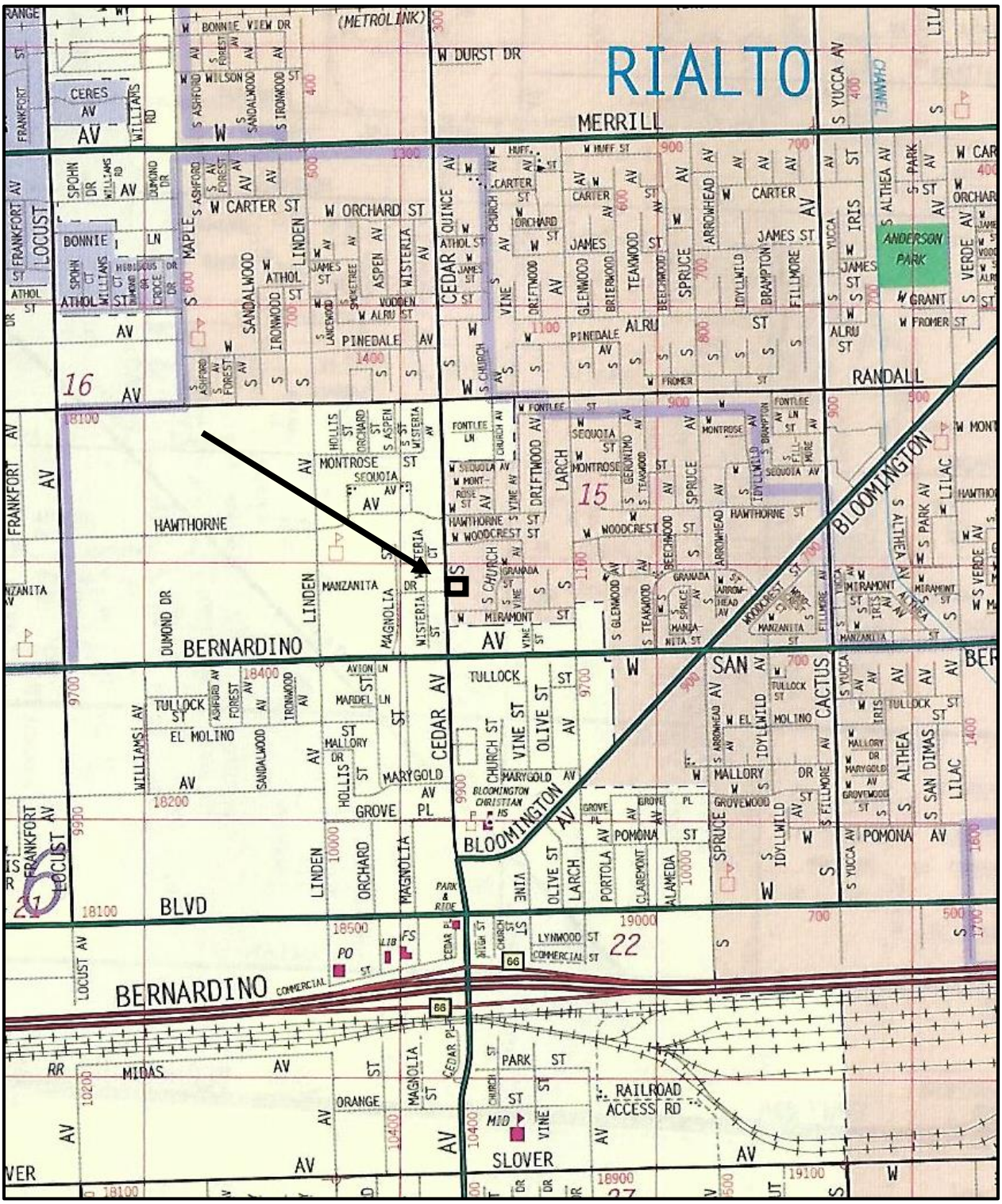

Figure 1. General Location of the Project Area.

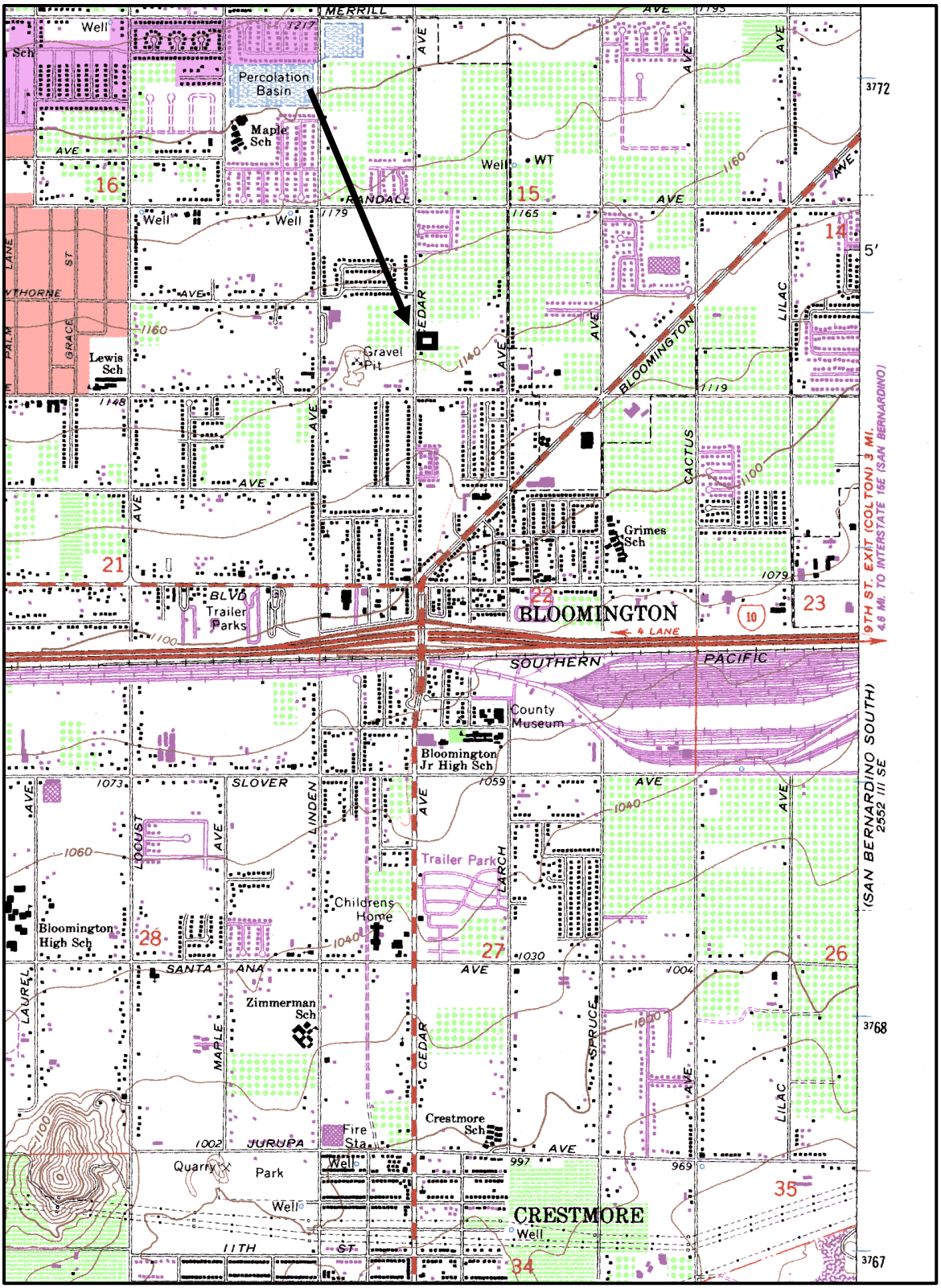

Figure 2. Special Location of the Project Area (USGS Fontana Quadrangle).

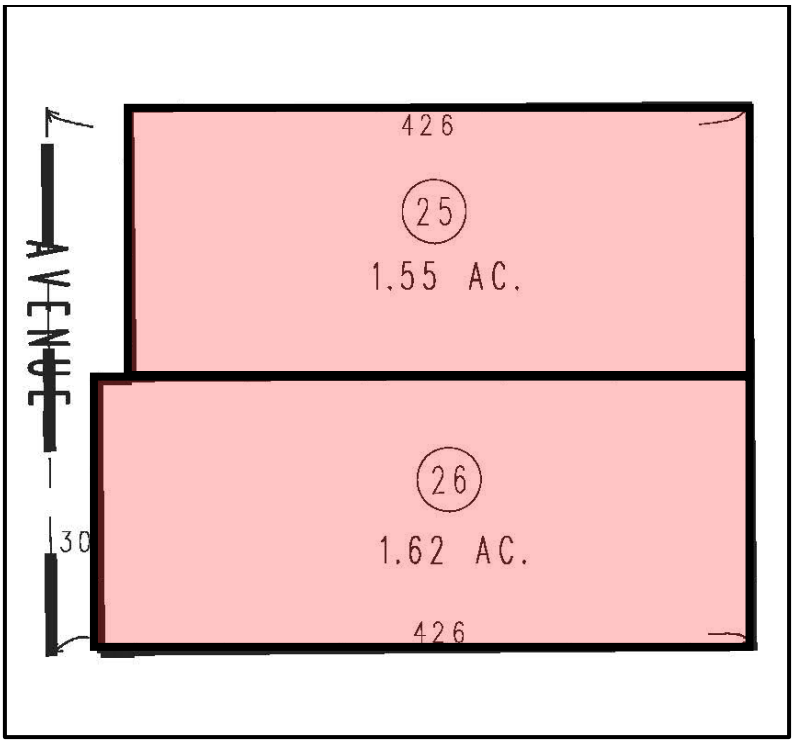

Figure 3. Assessor Parcel Map Illustrating Parcels -25 and -26.

Figure 4. Aerial Photograph Illustrating the Project Area.

Table 1. UTM Coordinates Defining the Current Project Area.				
Point	NAD 83		NAD 27	
	Easting	Northing	Easting	Northing
NW	463431	3771148	463511	3770951
SW	463461	3771048	463511	3770851
NE	463549	3771148	463629	3770951
SE	463549	3771048	463829	3770851

The proposed project involved the development of 22 residential units on property zoned R-3. The proposed site plan (Figure 5) illustrates an access point on Cedar Avenue, bisecting the site along the APN line between Parcel -25 and Parcel -26, and two cross-lanes running north/south. A small park is to be developed on the eastern side of the property. The 22 lots are essentially uniform in size (47' x 74' +/-). The relative sizes of the lots mandates the residences be two stories tall, with the garage incorporated into the first story.

The project area involves Assessor Parcel No. 0250-091-25 and -26, consisting of 3.17 acres. Aerial photographs show the evidence of weed abatement, but no indications of prior structural improvements. This particular area of Rialto is associated with the western extent of the San Bernardino Valley and east of the City of Fontana. It is currently within the boundaries of the City of Rialto (Cedar Avenue representing the City limits), but south of the historic core of the City of Rialto.

ENVIRONMENTAL SETTING

This general area is associated with the San Andreas Rift Zone and characterized by the presence of Cenozoic rocks and non-marine materials and relatively think deposits of Quaternary alluvium. These deposits tend to bury older topographic features. In general, the surfaces are relatively unstable.

Maps of the San Bernardino County, Southwestern Part, California, geologic maps (U.S. Department of Agriculture, Soil Conservation Service; SCS; Maps 2 and 7) identify the area as being specifically associated with the Tujunga Gravelly Loamy Sand (TvC), an "enormous alluvial fan emanating southwest from Lytle Creek and Cajon Canyon" (Shepard 2016; McKenna 2017 and 2018). A recent study (Converse Consultants 2016) addressed a nearby property and concluding the younger Quaternary alluvium with the property extends to 50 feet (+) below the current surface. Leighton and Associates (1986), in completed geologic coring in the Fontana area noted the younger alluvium may extend over 200 feet below surface, depending on the specific location of the sampling.

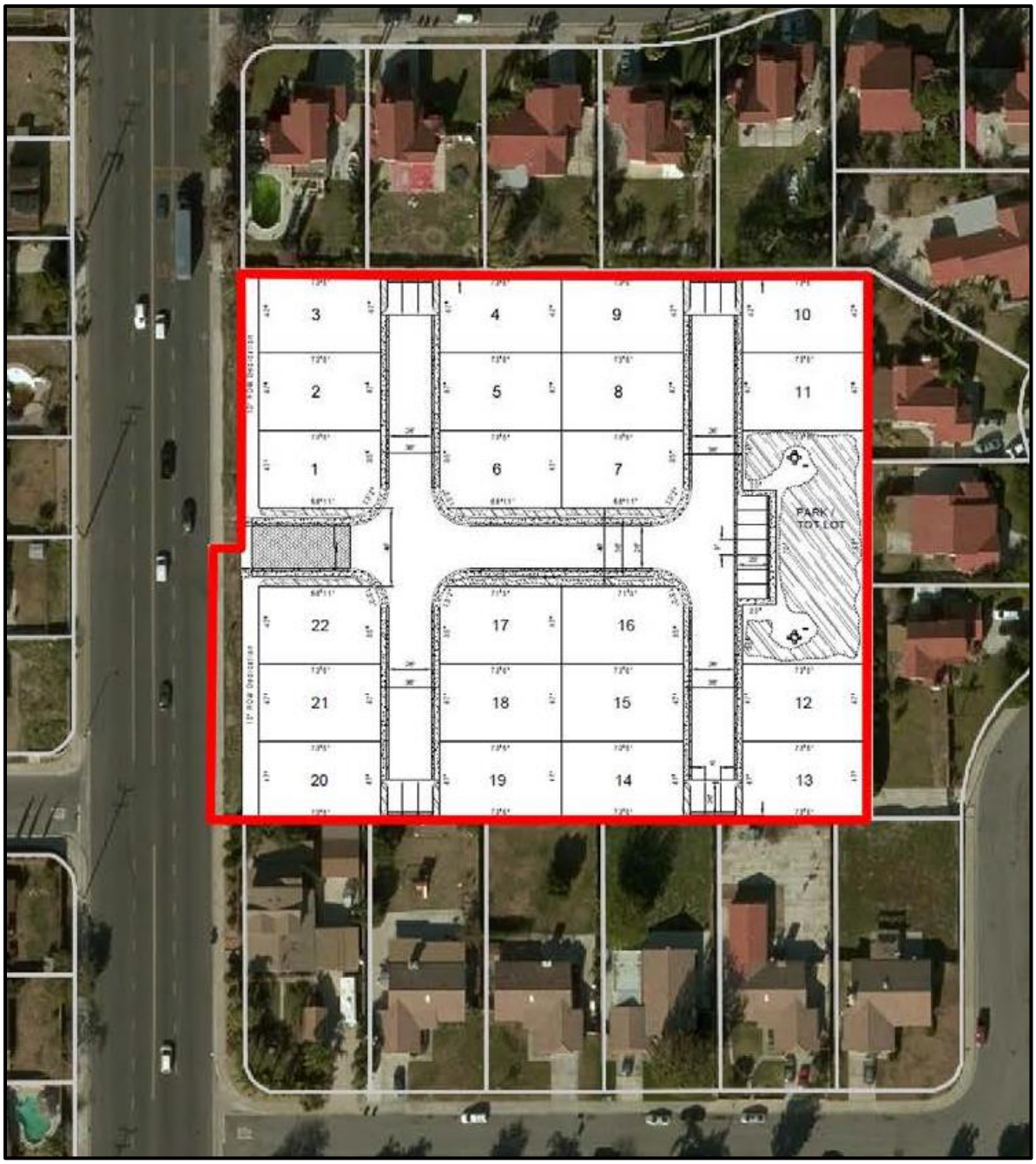

Figure 5. Proposed Subdivisions within the Cedar Villas Development.

During prehistoric times, and prior to any historic or modern impacts to the property, this area would have exhibited a desert Sagebrush Scrub biotic community. Hanes (1976:69) describes the desert Sagebrush Scrub as including big sage-brush in the form of Yucca and pine nuts along with rabbit brush, cotton thorn, antelope brush, scale broom, beaver

tail cactus, and salt brush. However, at the time of the field survey, the project area was found to be covered in intrusive, dry grasses and weeds, with no evidence of native vegetation.

BRIEF CULTURE HISTORY BACKGROUND

The current project area is located in an area generally associate with Southern California Coastal desert region of the very western Sonoran Desert. This area is culturally associated with Native American identified as Serrano or Vanyume. The Serrano claim the San Gabriel and San Bernardino Mountain areas and associated foothill area as traditional territory and, more recently, have made claims to areas south into Riverside County and north past Barstow (in the Mojave Desert). The Vanyume are generally associated with the areas of the desert floor in the Mojave Desert. Both groups are considered to be ethnographically related (Bean and Smith 1978:570) and, according to Kroeber (1925: 614-615) the Serrano and Vanyume were never large groups and their numbers dropped significantly during the Mission Period in California (between the 1770s and 1830s).

The Serrano/Vanyume were hunters and gatherers who practiced a system of seasonal movement and resource exploitation. As the seasons changed, the populations moved to areas which provided additional or varied resources (e.g. different animals or vegetation for food; different elevations for protection from adverse weather conditions; and/or differing locations for trade).

At times, these Natives would establish small villages for the elderly or young who were not able to travel long distances. Because settlements generally required a fresh water source, many of the known village sites have been located along major water courses (e.g. the Santa Ana River or Lytle Creek). Artifacts generally associated with these sites include metates, manos, mortars, pestles, projectile points, flaked stone tools, bone tools, basketry, and occasionally pottery traded from populations along the Colorado River (Bean and Smith 1978:571).

During historic times, the project area was within the historic boundaries of the Rancho Muscupiabe, granted to Michael White (Miguel Blanco) in 1843 (west of the Rancho San Bernardino). Summarizing White's ownership, to rancho was associated with the Serrano and White was "persuaded" to set up a rancho on the path used by raiding bands of nomadic indigenous people (not Serranos). He constructed his home near the Cajon Pass and the Mojave Trail, but abandoned the rancho after he lost his cattle herd to numerous raids.

The rancho was later claimed as public lands (1872) and made available for homesteading, purchase, or trade. As such, it was formally subdivided into Township/Range/Sections and, in this case, in Township 1 South, Range 5 West, Section 15.

In 1887, a “Map of the Town of Rialto” was filed, illustrating the historic core area of the town and the surrounding rural properties. An average rural “Lot” consisted of 20 acres of land – less the right-of-ways for roads. In this case, the rural areas were identified as being associated with the holding of the Semi-Tropic Land and Water Company (Figure 6). The current project area is within Lot 321 of the Semi-Tropic lands.

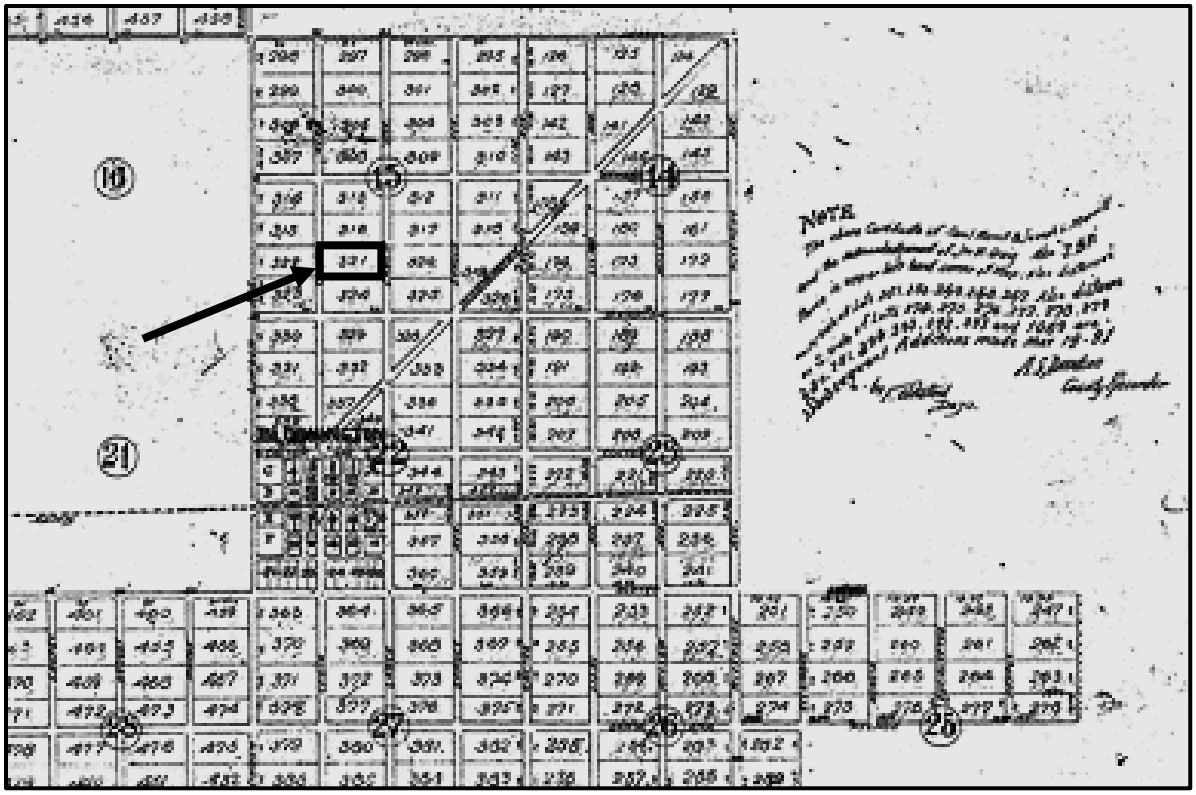

Figure 6. Map of 1887 Illustrating Lot 321 of the Semi-Tropic Land and Water Company Holdings.

In 1892, Cave prepared maps of San Bernardino County based on Township and Range (on file, San Bernardino County Archives, San Bernardino). His map for Township 1 South, Range 5 West, Section 15, identified the owner of the entire Section as A.J. Pope. It also illustrates the “Road to San Bernardino” crossing the southern half of the Section and running very close to the project area.

A.J. Pope was an individual that owned numerous sections in this area – Section 15 being only a portion of his vast holdings. The 640 acres of Section 15, in 1892, were undivided. Subsequent research confirmed, by 1895, this Section reverted back to the Semi-Tropic Land & Water Company – holding it until 1900. By 1895, the land in Section 15 was sub-

divided by the Semi-Tropic Land & Water Company and the current project area was, in fact, within Lot 321, as noted above.

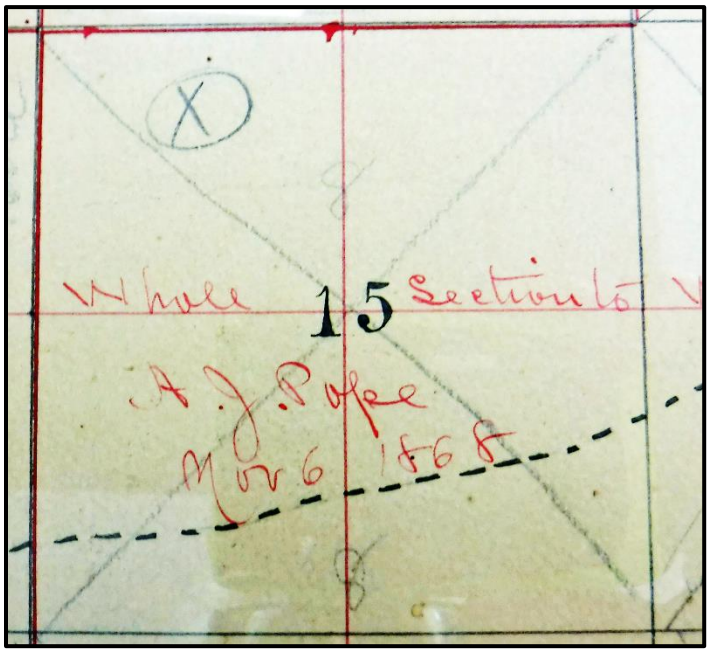

Figure 7. Cave Map (1892) Notations for T1S, R5W, Section 15.

In 1901, the 20 acre Lot 321 was one of many lots transferred to the Fontana Land Development Company and, in 1906, it was transferred to the California Fruit Growers' Association, suggesting Lot 321 was under cultivation. However, it was not. No improvements were listed for Lot 321 between 1901 and 1907. After 1907, the property (20 acres) was sold numerous times, all without improvements, including:

1908	George E. North
1909-1911	H.G. Dent
1912-1917	Los Angeles Trust and Savings Banl
1917-1919	Anna F. Leach
1920-1921	Dorothy Leach Hardy

Dorothy Leach Hardy sold her property in 1922 – selling the northern ½ (10 acres) to A.P. and Margaret Fassel and the southern ½ (9.55 acres) to H.G. Haughty. In 1923, each new owner improved their holdings with modest structural improvements ($100 and $130, respectively). The Fassels held the northern half until 1929. Haughty sold the southern acreage to C.S. and Amy Blanchard in 1927 (until 1931).

In 1929, the Fassels subdivided their land, maintaining the northern 6.8 acres for themselves (with the improvements) and legally separating the southern 2.8 acres, while maintaining ownership until 1932.

Parcels 0250-091-25 and -26 are legally described as being within the southern half of Lot 321, making them part of the holdings of C.S. and Amy Blanchard (still owning 9.55 acres. In 1932, the Blanchards sold their land to W.A. and Margaret W. Warren (with the modest improvements valued at $160. The Security First National Bank of Los Angeles claimed the property in 1934-1935, selling it to James R. and Nettie M. Porter in 1936. At this time, the land was valued at $1710 and the improvements at $240. The property was transferred to Wilmer D. and Vena M. Parker in 1945 and, in 1946, the Parkers subdivided the 9.55 acres into two lots: the eastern 6.32 acres (with the improvements) were kept by the Parkers and the western 3.23 acres were sold to Preston D. and Lena A. Cloud. No structural improvements or tree values were listed by the Assessor. James R. and Marion B. Hart purchased the 3.23 acres (fronting Cedar Avenue) in 1948 and were still the listed owners in 1951. There is a data gap between 1951 and 1982, when the owner of the project area (now 3.17 acres with the minor lot line adjustment of Parcel -25) was identified as Ernest (and Joanne C.) Morelli. The Morellis married in San Bernardino in 1964, suggesting they did not purchase the property until after 1964. Between 1985 and 2004, the owner was George Tsakanis. Subsequently, between 2004 and 2019, the legal owner has been listed as Redhill Partners. No improvements were recorded for this property (3.17 acres), while improvements were listed for properties to the south, east, and north. Despite the Assessor notes (no values), an aerial photograph dating to 1948 illustrates young trees planted on the property – during the Hart ownership (Figure 8). The trees are still evident on the 1968 aerial photograph.

In summarizing the historic land use of the project area, it was confirmed the property had numerous owners between 1892 and 1948. The first improvements appear in 1948 and during the Hart ownership. Prior to 1948, the land was unimproved and unoccupied. The trees (orchard) were present between 1948 and 1968 – under the Hart and Morelli ownerships (possibly others in between these two documented owners; possibly leased to neighbors with other orchard development). Once the trees were removed – likely be the Morellis – the land was left vacant and the boundaries well established.

METHODOLOGY

To adequately address the current project, as defined, the following tasks were completed:

1. Archaeological Records Check: An archaeological records search was completed for this investigation at the California State University, Fullerton,

South Central Coastal Information Center (August, 2019; Appendix B). The results were used to place the project area within a context for preliminary review and evaluation.

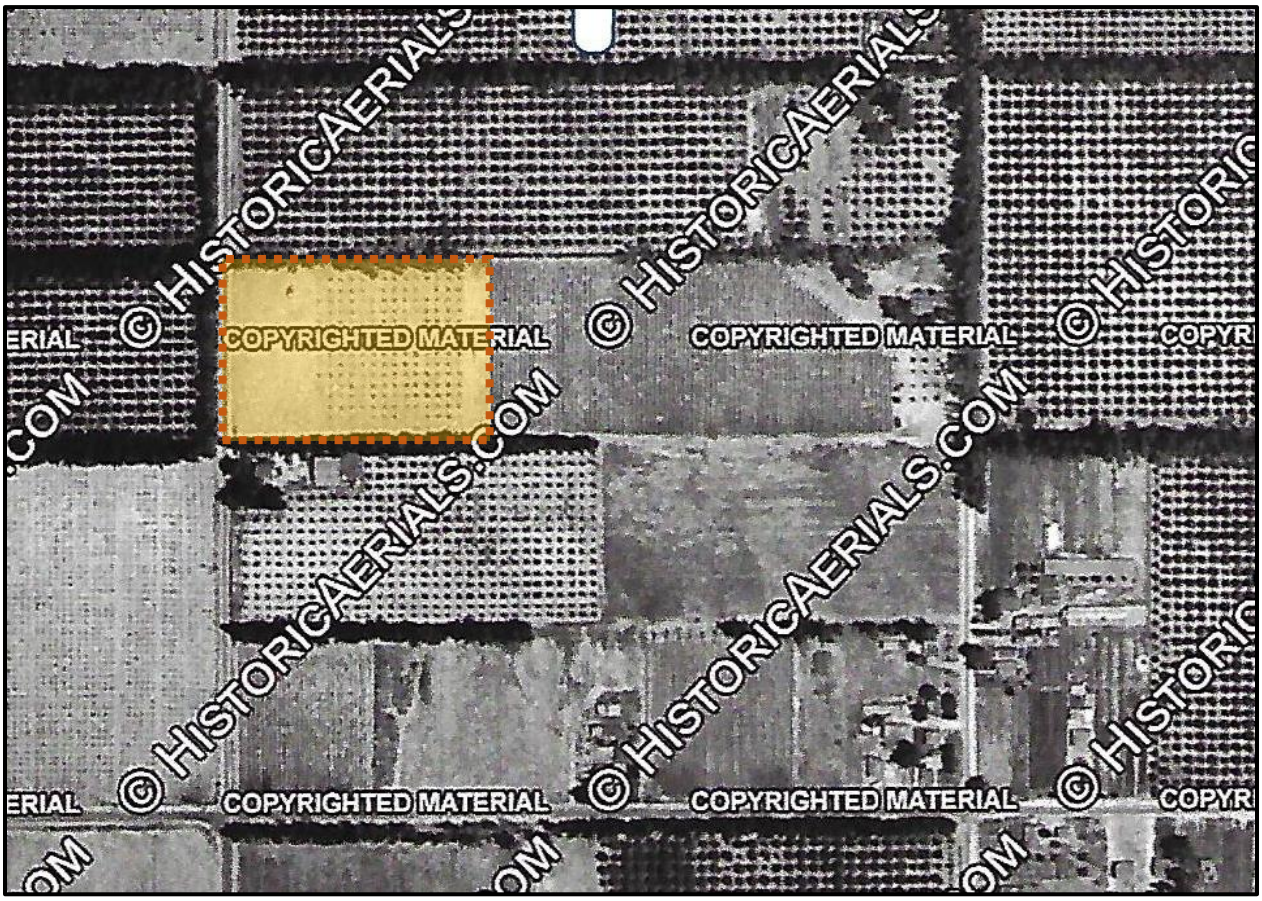

Figure 8. Aerial Photograph of 1948 Illustrating Young Trees within the Project Area.

2. Historic Land Use Research: Historic land-use data was compiled by McKenna et al. through research conducted at the Bureau of Land Management General Land Office records (on-line); the San Bernardino County Archives, the San Bernardino County Assessor's Office and Recorder's Office, the San Bernardino County Surveyor's Office (for historic maps), and local historic data from the McKenna et al. in-house library. McKenna et al. also reviewed historic aerial photographs (on-line) and researched owners through Ancestry.com, as far as possible.

3. Native American Consultation: Native American Consultation was conducted through consultation with the Native American Heritage Commis-

sion. The Commission responded and provided a listing of local Native American representatives wishing to be informed of projects within the ancestral territories. McKenna et al. mailed the project description and records search results to these individuals and referred them to the City of formal consultation. The McKenna et al. level of consultation is considered preliminary, leaving SB-18 and/or AB-52 consultation to the City of Rialto, as the City and Native American representatives are responsible for the formal government-to-government consultation (Appendix C).

4. Paleontological Overview: A paleontological overview was obtained by McKenna et al. from the Natural History Museum of Los Angeles County and is presented in Appendix D of this report.

5. Field Survey: The project area was surveyed on August 9, 2019, by M. Abraham McKenna, B.A. and J.D., under the supervision of Jeanette A. McKenna, Principal Investigator for McKenna et al. The property was accessed from Cedar Avenue and was easily accessible. The survey was conducted on an intensive level, via a pedestrian survey with swaths of less than fifteen meters apart. The survey was supplemented by field notes (on file, McKenna et al.) and a photographic record (Appendix E).

6. Analysis of the Data Compiled: The analysis of the data compiled was designed to evaluate any identified cultural resource within the project area. In this case, analysis was limited because of the negative findings. Supplemental research data used in the overall research and analysis is presented in Appendix F. Because the property was held/owned during the historic period, McKenna et al. completed DPR-523 forms to complete the historic record for this property.

7. Preparation of a Technical Report: In accordance with CEQA requirements, this technical report has been prepared with format and data requirements requested by the Office of Historic Preservation (OHP) and the California State University, South Central Coastal Information Center, Fullerton.

PREVIOUS RESEARCH

McKenna et al. completed a standard archaeological records search for the proposed Rialto Fire Department project area in the City of Rialto, San Bernardino County, CA., through the CSUF South Central Coastal Information Center (Appendix B). This research confirmed the project area was not previously surveyed for cultural resources, but a minimum of twenty-three (23) cultural resources investigations have been completed within one mile of the project area (Table 2). One of these projects was mis-mapped ((1063506), resulting in only twenty-two projects within one mile of the project area. As mapped, it is

interesting to note that no reports were identified for the recently developed residential communities surrounding the project area. These improvements are not illustrated on the 1981 USGS Fontana Quadrangle, but have appeared on the aerial photographs by 1994. All developments should have been subjected to investigation and, if they were, the reports have not been filed with the Information Center.

Table 2. Cultural Resources Studies Identified within One Mile (+) of the Project Area.

No.	NADB	Citation	Description	Status
1	1060439	Hearn 1976	Bloomington Park & Rec	
2	1061772	Hallaran & Swope 1988	Rialto Gateway Project	
3	1062195	Farnsworth 1989	Linden Avenue Develop.	
4	1062853	Foster et al. 1991	Inland Feeder Project	
5	1063099	Alexandrowicz et al. 1996	Valley Blvd. at Cedar Ave.	
6	1063176	Love et al. 1997	Bldg. Eval., Bloomington	
7	1063506	McDonald & Goodman 2001	Guzzlers 6404 & 6312	NA
8	1063600	Brechbiel 1998	Cell Tower Site	
9	1063603	Love 1998	Colton-Fontana Pipelines	
10	1063897	McKenna 2003	FUSD Elem. #29	
11	1063919	William Self Assoc. 2001	Fiber Optic Monitoring	
12	1064246	Fulton & Harper 2004	Cell Tower Site	
13	1064261	McKenna 2004	CJUSD Middle school #5	
14	1064866	Dice 2004	Cell Tower Site	
15	1064867	Taniguchi 2004	Calvary Chapel	
16	1065086	McCormick & Gust 2006	APNs on Valley Blvd.	
17	1065460	Tang et al. 2007	APNs in Bloomington	
18	1066128	Wlodarski 2008	Cell Tower Site	
19	1066495	Wlodarski 2009	Cell Tower Site	
20	1066516	Ashkar 1999	Cell Tower Site	
21	1066917	Bonner & Williams 2010	Cell Tower Site	
22	1067123	Panich & Holson 2010	Trans. Line Access Roads	
23	1067960	Self 2010	CalNev Expansion Project	

With only three exceptions, the identified studies were either south of San Bernardino Avenue or north of Merrill Avenue.

As a result of the studies listed above, twenty-three (23) cultural resources were identified within one mile of the project area and an additional seven (7) historic properties were identified on the OHP Historic Properties listing (Table 3). As listed, all of the identified resources are historic archaeological site or standing structures. It is also noted, the San Bernardino County Museum (36-015135) is nowhere near this project area.

Table 3. Resources Identified within One Mile (+) of the Project Area.			
Site No.	Citation	Description	Status
36-006868	Schmidt et al. 1990	Historic Refuse Scatter	6Z
36-008542	HRI 072976	Bloomington Garage (1912)	7L
36-008543	Alexandrowicz 1996 (+)	Bloomington Garage Refuse	7L
36-008544	Alexandrowicz 1996 (+)	Historic Refuse Deposit	6Z
36-008551	Tang 1997	Hague Residence	6Z
36-008927	Lerch & Swope 1997	Historic Refuse Scatter	6Z
36-010330	Paul et al. 2012	SPRR Alignment	1S
36-012595	Taniguchi 2004	1391 Merrill Avenue	6Z
36-015135	Smith 1969 & 1975	SB Co. Museum	(CPHI-1)
36-017619	HRI 080747	654 Cactus Avenue (1952)	7N1
36-017621	HRI 087777	758 Cactus Avenue(1912)	7N1
36-017626	HRI 107345	842 S. Lilac Avenue (1914)	6L
36-017650	HRI 107349	1510 Merrill Avenue (1927)	5S2
36-020322	Marvin 2003	18639 Slover Avenue	6Z
36-020322	Marv in 2003	10074-10076 Cedar Avenue	6Z
36-020333	Marvin 2003	10056 Cedar Avenue	6Z
36-020334	Marvin 2003	10044 Cedar Avenue	6Z
36-020335	Marvin 2003	10435 Cedar Avenue	3S
36-020336	Marvin 2003	10169 Church Street	6Z
36-020568	Smallwood 2007	18338 Valley Blvd.	6Z
36-020569	Tang 2007	Rear Residence	6Z
36-020570	Tang 2007	Gabe's Auto Upholstery	6Z
36-020571	Tang 2007	18412 Valley Blvd.	6Z
36-020572	Tang 2007	18434 Valley Blvd.	6Z
36-020573	Tang 2007	18434 Valley Blvd.	6Z
36-021608	Hollins 2008	18687 Commercial Street	6Z
36-021609	Hollins 2008	1030 Bloomington Avenue	6Z
36-021610	Hollins 2008	9935 Bloomington Avenue	6Z
	HRI 152580	1391 Merrill Avenue (1950)	6Y
	HRI 154606	9666 Linden Avenue (1946)	6Y

Based on these findings, the project area has been assigned the following preliminary levels of sensitivity:

Prehistoric Archaeological Sites	**LOW to NONE**
Prehistoric Archaeological Isolates	**LOW to NONE**
Historic Archaeological Sites	**LOW**
Historic Archaeological Isolates	**LOW**
Built Environments (Buildings/Structures)	**NOT APPLICABLE**

Cultural/Historic Landscapes	**LOW**
Ethnic Resources	**NOT APPLICABLE**

With respect to paleontological resources, McLeod (2018 and 2019) completed paleontological overviews of the project area and a nearby project site. He concluded the area consists primarily surficial deposits of older Quaternary alluvial deposits – Holocene – with a potential for and, in the southwestern corner, exposed younger Quaternary alluvial deposits. Neither the older or younger alluvial deposits are conducive to yielding paleontological specimens, but deeper deposits (pre-Holocene) may contain fossil remains. No such fossils have been reported in the immediate area.

McLeod recommends paleontological monitoring in areas that yield evidence of pre-Holocene deposits derived from the nearby San Gabriel and San Bernardino Mountains, with a potential for older alluvial deposit near the eastern boundary of the property. Fossils may be present at a relatively shallow depth, despite other references citing excessive depth to the younger alluvium. Significant fossil specimens have been recovered from the area of Sumner Avenue (west of Mira Lona) at depth of 9 to 11 feet below surface.

Shallow excavations are not expected to yield evidence of fossil specimens, but deeper excavations should be monitored and sampled in accordance to local policies and guidelines, to insure significant specimens are not missed and/or destroyed by the proposed developments.

In summary, and based on the archaeological records search data, review of aerial photographs and historic maps, and the paleontological overview, McKenna et al. confirmed the project area was not previously investigated for archaeological or paleontological resources and, while it is unlikely archaeological resources will be present, there is a greater likelihood the evidence of buried paleontological specimens will be found, should project related excavations impact deposits of older Quaternary alluvium.

RESULTS OF THE INVESTIGATION

At the time of this investigation, McKenna et al. confirmed the project area was not previously surveyed for cultural resources and it appears the surrounding properties – although developed after 1981 – were also not surveyed for cultural resources. Therefore, there were no records available for review. This study compiled the general data pertaining to Section 15 and then narrowed the investigations to address the specific project area.

McKenna et al. contacted the Native American Heritage Commission and inquired into the presence/absence of resources in the Sacred Lands File. The Commission respond-

ed in the negative – no records of sacred or religious sites in the immediate area (Appendix C) . A list of local Native American representatives was made available and McKenna et al. sent letters to these individuals, enclosing the results of the records search and project descriptions, requesting any information they might wish included in the technical document. McKenna et al. also referred these individuals to the City of Rialto (Lead Agency) for consultation. Any responses received by McKenna et al. have been included in Appendix C and, should additional responses be received, they will be forwarded to the Lead Agency via Lilburn Corporation.

The project area was determined to be moderately sensitive for paleontological resources. Depending on the extent of excavations for the proposed development, it may be deemed necessary to complete a level of paleontological monitoring. In this case, McKenna et al. is recommending all excavations deeper than five feet below the current surface be monitored for paleontological resources and, if evidence of older alluvium is identified in shallower contexts, these soils should be monitored, as well.

The intensive field survey of the 3.17 acre project area yielded no evidence of prehistoric or historic archaeological resources. The survey also confirmed there is no evidence of any structural remains with the property and no evidence of the ca. 1948-1968 orchard. The property is, however, associated with long-term, historic ownership and, therefore, McKenna et al. has prepared a set of DPR-523 forms documenting the property (Appendix G). This documentation emphasizes the property is **NOT** a significant historical resource and its recordation is not intended to suggest any significance. It is merely a tool for identifying a property that has a recordable history.

CONCLUSIONS AND RECOMMENDATIONS

Based on the recent historical research, field investigations, and documentation, McKenna et al. has concluded the project area yielded no evidence of paleontological resources, no evidence of prehistoric archaeological resources, and no evidence of historic archaeological resources, no evidence of structural remains, and no evidence of the historic period orchard development. No standing structures were ever associated with this property. The property has not been associated with any historically significant events and no historically significant persons. Overall, the property is clear of any identifiable cultural resources, with the understanding there is always a potential for buried resources that would only be identified as a result of earth moving.

McKenna et al. has concluded the project area is not culturally significant or sensitive, but buried paleontological specimen may be on the property. At this time, the proposed project will not result in any adverse environmental impacts. While the negative findings would generally result in a conclusion that mitigation measures are unwarranted, the rel-

ative sensitivity for paleontological resource necessitates the recommendation for a paltontological monitoring program to be undertaken, should the project related earth moving impact older Quaternary alluvial deposits. Therefore, McKenna et al. presents the following recommendations:

A. The project proponent have a paleontological consultant **on-call** to assess any fossil (paleontological) specimens that may be uncovered during earthmoving activities within the project area;

B. If fossil specimens are identified, the remainder of earthmoving activities be subjected to paleontological monitoring;

C. The paleontological monitoring program must be planned and conducted in a manner consistent and compliant with the policies and guidelines of the San Bernardino County Museum, Redlands;

D. Should archaeological resources be identified, an archaeological consultant should be on-call and permitted to examine the find and make recommendation in accordance to professional practices and, if deemed necessary, recommend the initiation of an archaeological monitoring program;

E. If, at any time, evidence of human remains are uncovered, the project proponent or representative must halt all activities in the area of the find (with a 50 foot buffer) and immediately notify the City and County Coroner of the discovery. The Coroner must be permitted access to the property to assess the remains.

   If the remains are determined to be human and of Native American origin, the Coroner will notify the Native American Heritage Commission and, in consultation between the Most Likely Descendant (MLD), as identified by the Commission, the project proponent, and the City will determine the disposition of the remains.

   If the remains are archaeological, but non-Native American, the archaeological consultant will manage the find. If the remains are determined to be of forensic sensitivity, the Coroner will take possession of the remains. With the exception of the Coroner's time and undertaking, the costs of managing human remains (Native or non-Native) will be the responsibility of the project proponent.

CERTIFICATION

I hereby certified that the statements furnished above and in the attached exhibits present the data and information required for this report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: Aug. 25, 2019 Signed: Jeanette A. McKenna

Jeanette A. McKenna, Principal Investigator

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APPENDIX A:

Professional Qualifications

JEANETTE A. McKENNA

Owner and Principal Investigator
McKenna et al., Whittier CA

Ms. McKenna specializes in the discipline of Cultural Resource Management: prehistoric archaeology, historic archaeology, historic architecture, and history. She holds a Master's Degree in Anthropology/Archaeology and was recently awarded an Honorary Doctorate of Letters (HonDL) by the International Biographical Centre of Cambridge, England. She is a past member of the Board of Directors for the Society of Professional Archaeologists (SOPA 1993-97) and was certified by the Society to conduct both prehistoric and historic archaeological studies. Ms. McKenna is also recognized by the California Office of Historic Preservation as qualified to complete historic architectural studies. Ms. McKenna was on the Board of Directors for SOPA when the Society established the Registry of Professional Archaeologists (RPA) and has been a Registered Professional Archaeologist since 1998. Ms. McKenna has over 39 years of professional experience as an archaeologist/cultural resource manager and has participated on over 1700 projects of various sizes and complexities. The majority of her work has been conducted as a Field Director, Project Manager, and/or Principal Investigator throughout California and the Greater Southwest.

TECHNICAL CAPABILITIES

- Vast experience in the greater Southwest, Great Basin, and Southern California regions. Familiar with the full range of cultural resource investigations and has completed projects within the public and private sectors, including environmental management firms, planning and engineering firms, and State and federal agencies.
- Active in the discipline of Cultural Resource Management since 1976; over 39 years of professional experience in Southern California, Arizona, and Nevada.
- Particular interest in the desert regions of California and Arizona, with specializations in the Protohistoric and Historic Contact Periods.
- Considerable experience in dealing with prehistoric cultural remains and working directly with Native American groups in archaeological training programs (Arizona State University; the Southern California Indian Center, Garden Grove).

EDUCATION AND AFFILIATIONS

B.A., Anthropology, 1977, CSU Fullerton
M.A., Anthropology, 1982, CSU Fullerton
HonDL, 2015, Int. Biog. Centre, Cambridge
Lambda Alpha Lambda Honors Society
Post Graduate Studies, Arizona St. Univ., 1982-85
Post Graduate Studies, UC Riverside, 1991-92
Certification Program: CEQA, Land Use and Environmental Planning, UC Riverside, 1997-98
Society of Professional Archaeologists (SOPA) Certification: Field/ Prehistoric Archaeology and Historical Archaeology (1984 to Present)
Registry of Professional Archaeologists (RPA)
Board of Directors, Society of Professional Archaeologists 1993-1997 (American Society of Conservation Archaeologists Representative)
BLM California Permit (renewable)
BLM Arizona State Permit (renewable)
Riverside County Registration No. 161
Arizona State Antiquities Permit (renewable)
Curation, San Bernardino Co. Museum
Curation, Arizona State University

SELECTED PROJECT EXPERIENCE

- Historic Architectural Studies for Renovation and Restoration, the Greek Theatre, Los Angeles CA
- Evaluation of Cultural Resources: Burbank and West Hollywood Redevelopment Project Areas, Los Angeles County, CA
- Historic Property Survey for the City of Whittier, Los Angeles County, CA
- Archaeological Investigations and Resource Evaluations for the Proposed Cajon Pipeline, San Bernardino and Los Angeles Counties, CA
- Archaeological Class I Investigations, Proposed Mojave Pipeline, San Bernardino County, CA
- Cultural Resources Investigations (Phases I, II, III, and Mitigation Monitoring) for the RIX/SARI Projects, Santa Ana Watershed Project Authority (SAWPA), San Bernardino and Riverside Counties, CA
- Phase I, II, and III Archaeological Investigations for the County Sanitation Districts of Los Angeles County, Puente Hills Landfill Solid Waste Management Facility Expansion Project, Whittier, CA
- Archaeological Mitigation Program, Phoenix Indian School Track Site Project. Arizona State University Office of Cultural Resource Management and the Bureau of Indian Affairs, Phoenix, AZ
- Archaeological and Testing Program for the Hidden Valley Golf Course and Van Buren Golf Course Properties, Riverside County, CA
- Cultural Resources Overview Studies for the Annexation of Unincorporated County Lands to the City of Ontario, CA
- Historic Property Survey Reports: Warner Bros. Main Lot Ranch Lot Properties, Burbank, CA
- Historic Archaeological Investigations for L.A. County Sheriff's Facility, Lancaster, CA.

APPENDIX B:

Archaeological Records Search

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

8/5/2019 Records Search File No.: 20473.6471

Jeanette A. McKenna
McKenna et al.
6008 Friends Avenue
Whittier, CA 90601

Re: Record Search Results for McKenna et al. Job No. 2014

The South Central Coastal Information Center received your records search request for the project area referenced above, located on the Fontana, CA USGS 7.5' quadrangle. The following reflects the results of the records search for the project area and a 1-mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ shape files ☒ hand-drawn maps

Resources within project area: 0	None
Resources within 1-mile radius: 23	SEE ATTACHED MAP or LIST
Resources listed in the 2012 OHP Historic Properties Directory within project area: 0	None
Resources listed in the 2012 OHP Historic Properties Directory within 1-mile radius: 7	SEE ATTACHED LIST FOR INDIVIDUAL PROPERTY STATUS CODES – resource locations from the OHP HPD may or may not be plotted on the custom GIS map or provided as a shape file
Reports within project area: 0	None
Reports within 1-mile radius: 23	SEE ATTACHED MAP or LIST

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Digital Database (spreadsheet):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database (spreadsheet):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Historic Properties Directory 2012:	☒ enclosed	☐ not requested	☐ nothing listed

Archaeo Determinations of Eligibility 2012: ☐ enclosed ☐ not requested ☒ nothing listed
Los Angeles Historic-Cultural Monuments ☐ enclosed ☒ not requested ☐ nothing listed
Historical Maps: ☐ enclosed ☒ not requested ☐ nothing listed
Ethnographic Information: ☒ not available at SCCIC
Historical Literature: ☒ not available at SCCIC
GLO and/or Rancho Plat Maps: ☒ not available at SCCIC
Caltrans Bridge Survey: ☒ not available at SCCIC; please go to http://www.dot.ca.gov/hq/structur/strmaint/historic.htm
Shipwreck Inventory: ☒ not available at SCCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp
Soil Survey Maps: (see below) ☒ not available at SCCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Isabela Kott
GIS Technician/Staff Researcher

Enclosures:

(X) Custom Maps – 3 pages

(X) Resource Database Printout (list) – 3 pages

(X) Resource Database Printout (details) – 27 pages

(X) Resource Digital Database (spreadsheet) – 23 lines

(X) Report Database Printout (list) – 3 pages

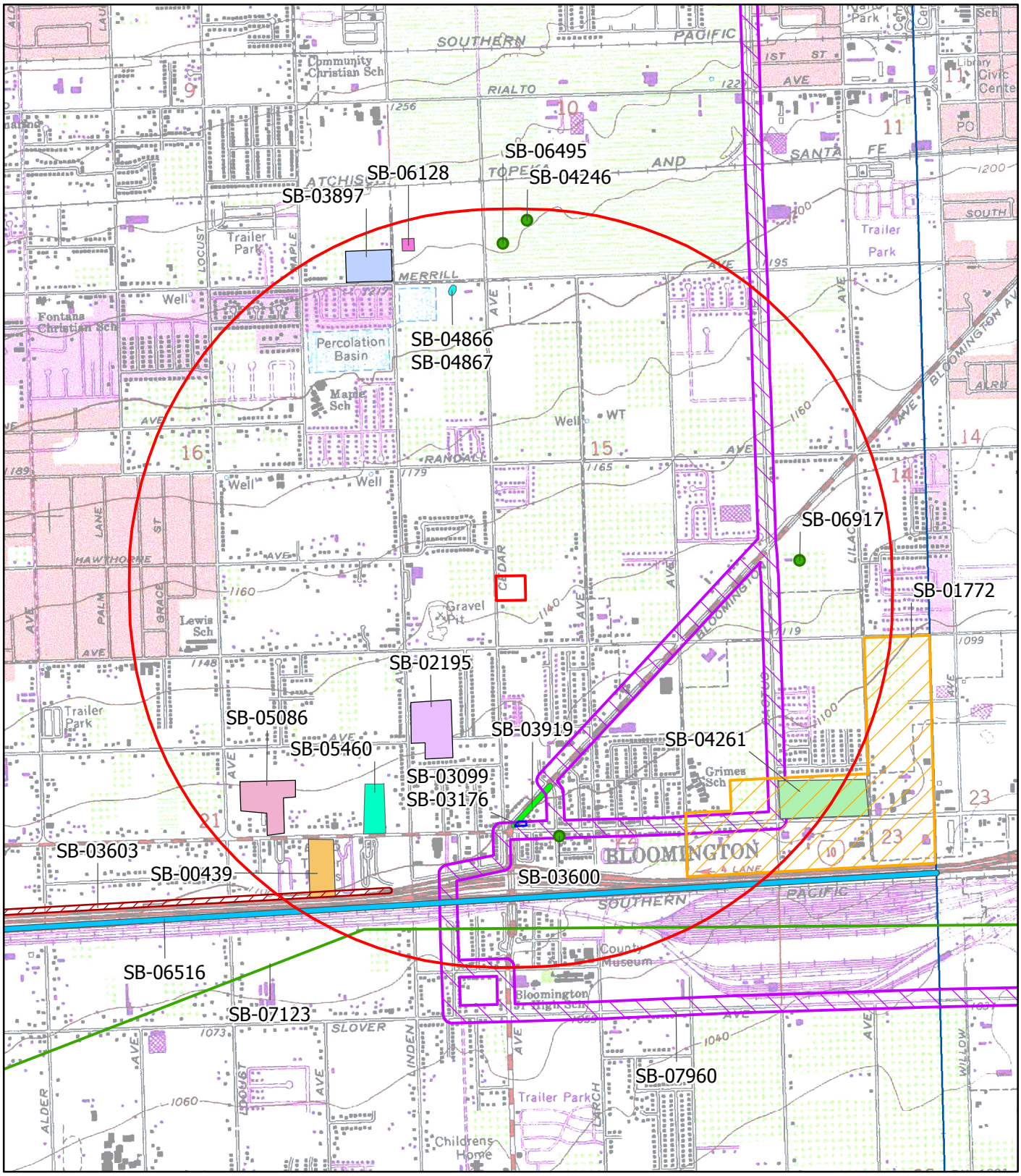
(X) Report Database Printout (details) – 25 pages

(X) Report Digital Database (spreadsheet) – 23 lines

(X) Resource Record Copies – (all) 215 pages

(X) OHP Historic Properties Directory (2012) – 4 pages

(X) National Register Status Codes – 1 page



N
W E
S

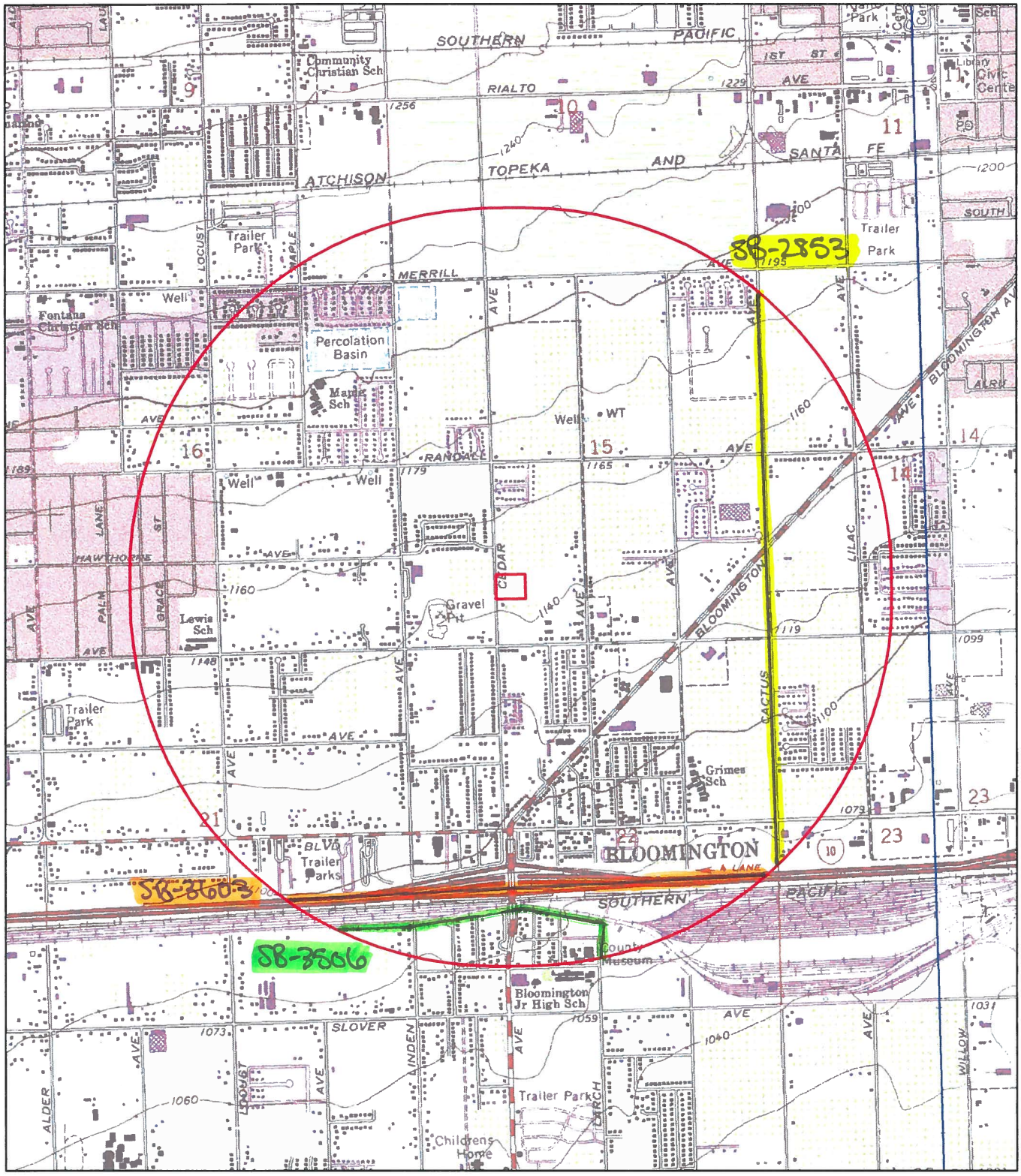
Miles
0 0.125 0.25 0.5

Reports within the project area: None
21 reports within a 1-mile radius

Fontana, CA
USGS 7.5' PR: 1981
1:24,000
INV #20473
Aug 2019

South Central Coastal Information Center

May depict confidential cultural resource locations. Do not distribute.



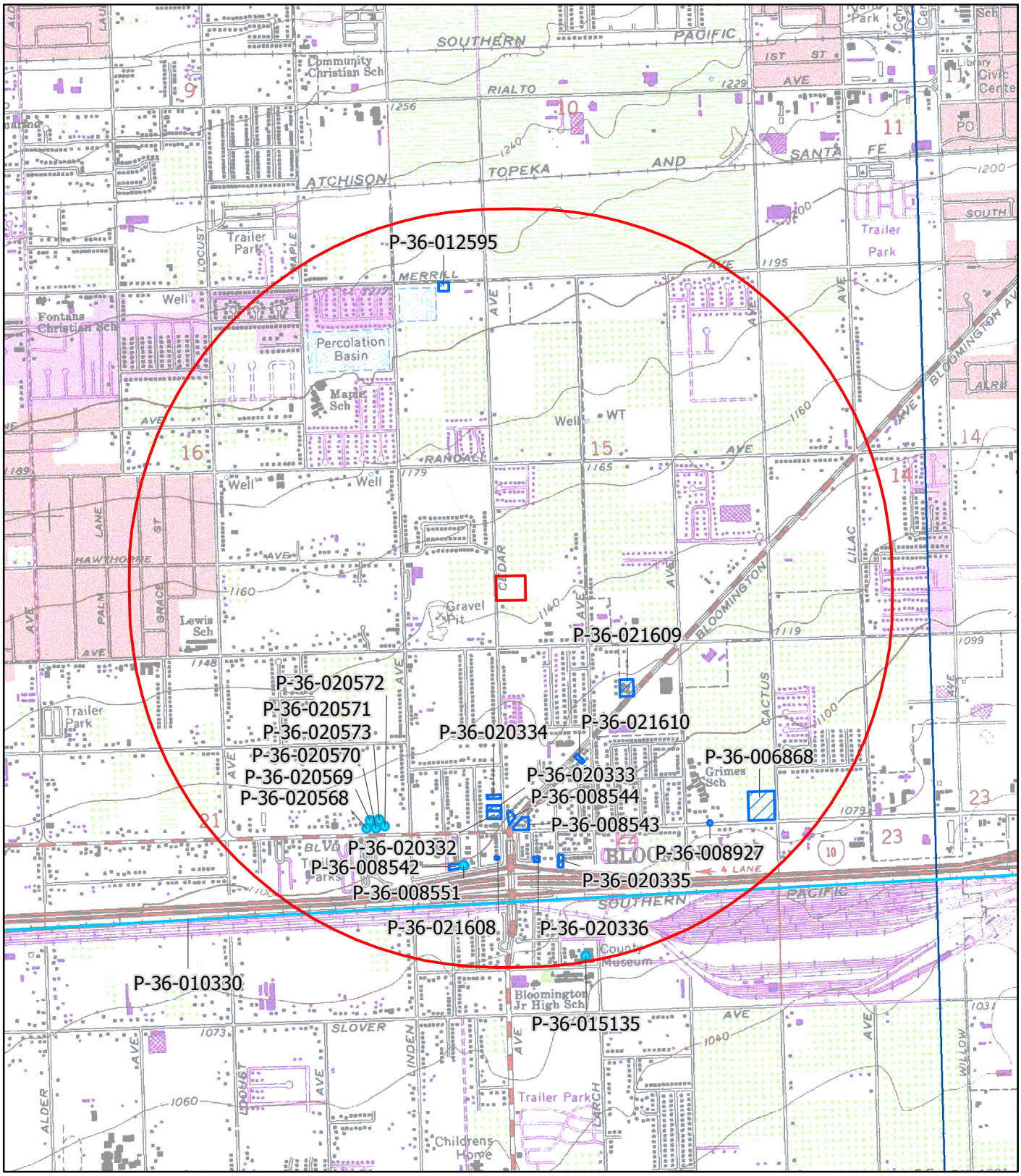
N
W E
S

Miles
0 0.125 0.25 0.5

Fontana, CA
USGS 7.5' PR: 1981
1:24,000
INV #20473
Aug 2019

South Central Coastal Information Center

May depict confidential cultural resource locations. Do not distribute.



N
W E
S

Miles
0 0.125 0.25 0.5

Resources within the project area: None
23 resources within a 1-mile radius

Fontana, CA
USGS 7.5' PR: 1981
1:24,000
INV #20473
Aug 2019

South Central Coastal Information Center

May depict confidential cultural resource locations. Do not distribute.

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SB-00439	NADB-R - 1060439; Voided - 76-11.9	1976	HEARN, JOSEPH E.	ARCHAEOLOGICAL - HISTORICAL RESOURCES ASSESSMENT OF BLOOMINGTON PARK AND RECREATION DISTRICT - TWO LOCATIONS	SAN BERNARDINO COUNTY MUSEUM ASSOCIATION	
SB-01772	NADB-R - 1061772; Voided - 88-2.3	1988	HALLARAN, KEVIN B. and KAREN K. SWOPE	ENVIRONMENTAL IMPACT EVALUATION: AN ARCHAEOLOGICAL ASSESSMENT OF THE RIALTO GATEWAY PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH UNIT, UCR	
SB-02195	NADB-R - 1062195; Voided - 89-9.11	1989	FARNSWORTH, PAUL	CULTURAL RESOURCE AND HISTORIC STRUCTURES SURVEYS OF THE LINDEN AVENUE DEVELOPMENT, BLOOMINGTON, SAN BERNARDINO COUNTY, CALIFORNIA	CHAMBERS GROUP	
SB-02853	NADB-R - 1062853	1991	FOSTER, JOHN M., JAMES J. SCHMIDT, CARMEN A. WEBER, GWENDOLYN R. ROMANI, and ROBERTA S. GREENWOOD	CULTURAL RESOURCE INVESTIGATION: INLAND FEEDER PROJECT, MWD OF SOUTHERN CA	GREENWOOD & ASSOCIATES	36-006086, 36-006354, 36-006847, 36-006848, 36-006849, 36-006850, 36-006851, 36-006852, 36-006853, 36-006854, 36-006855, 36-006856, 36-006857, 36-006858, 36-006859, 36-006860, 36-006861, 36-006862, 36-006863, 36-006864, 36-006865, 36-006866, 36-006867, 36-006868, 36-006869, 36-006870, 36-006871, 36-006872, 36-006940, 36-007021, 36-007050, 36-007051, 36-007053, 36-007054, 36-007055, 36-007702
SB-03099	NADB-R - 1063099	1996	ALEXANDROWICZ, J.S., SUSAN R. ALEXANDROWICZ, ARTHUR A. KUHNER, and EDWARD KNELL	HISTORIC PRESERVATION INVESTIGATIONS AT THE NORTHEAST CORNER OF VALLEY BLVD AND CEDAR AVE, BLOOMINGTON, CA: THE IDENTIFICATION PROGRAM. 79PP	ARCHAEOLOGICAL CONSULTING SERVICES	36-008542, 36-008543, 36-008544
SB-03176	NADB-R - 1063176	1997	LOVE, BRUCE, BAI TOM TANG, and RICHARD NORWOOD	CULTURAL RESOURCES EVALUATION REPORT: HISTORIC BUILDINGS CA-SBR-8542H & CA-SBR-8551H & ARCHAEOLOGICAL SITES CA-SBR-8543H & CA-SBR-8544H, LOCATED IN THE COMMUNITY OF BLOOMINGTON, SAN BERNARDINO COUNTY, CA. 69PP	CRM TECH	36-008542, 36-008543, 36-008544, 36-008551
SB-03506	NADB-R - 1063506	2001	MCDONALD, MEG and JOHN GOODMAN	ARCHAEOLOGICAL INSPECTION OF GUZZLERS 6404 & 6312, MOUNTAINTOP RANGER DISTRICT, SBNF, CA. 29PP	SBNF	36-010085

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SB-03600	NADB-R - 1063600	1998	BRECHBIEL, BRANT	CULTURAL RESOURCE RECORD SEARCH AND LITERATURE REVIEW FOR A PBMS TELECOMMUNICATIONS FACILITY: CM 015-13, BLOOMINGTON, CA. 4PP	LSA	
SB-03603	NADB-R - 1063603	1998	LOVE, BRUCE	INSTALLATION OF WATER PIPES ALONG I-10 BETWEEN COLTON AND FONTANA. 10PP	CRM TECH	
SB-03897	NADB-R - 1063897	2003	MCKENNA, JEANETTE A.	A PHASE I CULTURAL RESOURCE INVESTIGATION OF THE FONTANA UNIFIED SCHOOL DISTRICT ELEMENTARY SCHOOL #29 IN THE CITY OF RIALTO, SAN BERNARDINO COUNTY, CA. 40PP	MCKENNA ET AL	
SB-03919	NADB-R - 1063919	2001	WILLIAM SELF ASSOCIATES	REPORT ON CULTURAL RESOURCES MITIGATION AND MONITORING ACTIVITIES: FLUOR GLOBAL SERVICES LEVEL (3) FIBER OPTIC INSTALLATION. 11PP	WM SELF ASSOCIATES	
SB-04246	NADB-R - 1064246	2004	FULTON, TERRI and CAPRICE D. HARPER	CULTURAL RESOURCES ASSESSMENT: CINGULAR WIRELESS FACILITY NO. SB 289-02, CITY OF RIALTO, SAN BERNARDINO COUNTY, CA. 15PP	LSA	
SB-04261	NADB-R - 1064261	2004	MCKENNA, JEANETTE A.	A PHASE I CULTURAL RESOURCES INVESTIGATION OF TEH COLTON JOINT UNIFIED SCHOOL DISTRICT MIDDLE SCHOOL NO. 5 IN TEH CITY OF RIALTO, SAN BERNARDINO COUNTY, CA. 40PP	MCKENNA ET AL	
SB-04866	NADB-R - 1064866	2004	DICE, MICHEAL	RECORDS SEARCH RESULTS AND SITE FOR SPRINT TELECOMMUNICATIONS FACILITY SB60XC817A (CALVARY CHAPEL), 592 SOUTH CEDAR AVENUE, RIALTO, SAN BERNADINO COUNTY, CALIFORNIA		36-012595
SB-04867	NADB-R - 1064867	2004	TANIGUCHI, CHRISTEEN	HISTORIC ARCHITECTURAL ASSESMENT FOR SPRINT TELECOMMUNICATIONS FACILITY SB60XC817A (CALVARY CHAPEL) 592 SOUTH CEDAR AVENUE, RIALTO, SAN BERNADINO COUNTY CALIFORNIA		

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SB-05086	NADB-R - 1065086	2006	McCormick, Steven and Sherri Gust	Archaeological Resource Survey and Assessment Report for the Valley Boulevard, Project (APN 0252-091-04, 08, 25, 39), San Bernardino County, California.		
SB-05460	NADB-R - 1065460	2007	Tang, Bai "Tom", Terri Jacquemain, and Josh Smallwood	Historical/Archaeological Resources Survey Report: Assessor's Parcel Nos. 0252-091-16 and 0252-101-21 to -23 in the Community of Bloomington, San Bernardino County, California.	CRM Tech	36-020568, 36-020569, 36-020570, 36-020571, 36-020572, 36-020573
SB-06128		2008	Wlodarshi, Robert J.	Bechtel Wireless Telecommunications Site LA8064 (Solomon Colors II), 1251 West Durst Drive, Rialto, California	Cellular Archaeological Resource Evaluations	
SB-06495		2009	Wlodarshi, Robert J.	Bechtel/ AT&T Wireless Telecommunications Site LA8064 (Solomon Colors II)		
SB-06516	NADB-R - 1066516	1999	Ashkar, Shahira	Cultural Resource Inventory Report for Williams Communications, Inc., Proposed Fiber Optic System Installation Project, Los Angeles to Riverside, Los Angeles, Riverside and San Bernardino Counties.		
SB-06917	NADB-R - 1066917	2010	Bonner, Wayne H. and Sarah A. Williams	Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate IE24778E (Inland Lighthouse Church Monopole), 1123 South Cactus Avenue, Rialto, San Bernardino County, California.		
SB-07123	NADB-R - 1067123	2010	Panich, Lee and John Holson	Supplemental Archaeological Survey Report, 66kV Transmission Lines Access Roads, Tehachapi Renewable Transmission Project Segements & and 8, Los Angeles and San Bernardino Counties, California.		
SB-07960		2010	Self, William	Class III Cultural Resources Survey Addendum for the Proposed Calnev Expansion Project, California Portion San Bernadino County, California	William Self Associates, Inc.	36-000827, 36-000828, 36-003731, 36-005351, 36-006109, 36-006117, 36-006506, 36-006693, 36-006699, 36-006708, 36-007091, 36-007309, 36-007371, 36-008127, 36-008131, 36-008133, 36-008544, 36-008857, 36-010148, 36-010317, 36-012335, 36-013632, 36-015497, 36-020321, 36-020324, 36-020325, 36-020326, 36-020327, 36-020328, 36-020329, 36-020330, 36-022659, 36-022660, 36-022661, 36-022662, 36-022663, 36-022664

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-36-006868	CA-SBR-006868H	Resource Name - F-W #1	Site	Historic	AH04 (Privies/dumps/trash scatters)	1990 (Schmidt et al., Greenwood & Assoc)	SB-02853
P-36-008542	CA-SBR-008542H	Resource Name - Bloomington Garage and Residence; Other - P1073-40H; PHI - SBR-115; Other - ACS 96-6-1	Building, Site	Historic	AH02 (Foundations/structure pads); AH15 (Standing structures); AH16 (Other); HP02 (Single family property); HP06 (1-3 story commercial building)	1989 (John Anicic); 1991 (John Anicic); 1991; 1996 (J. S. Alexandrowicz, ACS); 2014 (Carrie Chasteen, Parsons)	SB-03099, SB-03176
P-36-008543	CA-SBR-008543H	Resource Name - 96-6-2	Site	Historic	AH04 (Privies/dumps/trash scatters)	1996 (J. S. Alexandrowicz, ACS); 1997 (Bruce Love); 1997 (Bruce Love)	SB-03099, SB-03176, SB-03289
P-36-008544	CA-SBR-008544H	Resource Name - 96-6-3	Site	Historic	AH04 (Privies/dumps/trash scatters)	1996 (J. S. Alexandrowicz, ACS); 1997 (Bruce Love)	SB-03099, SB-03176, SB-07960
P-36-008551		Resource Name - LAGUE HOUSE	Building	Historic	HP02 (Single family property)	1997 (Bai "Tom" Tang, CRM Tech)	SB-03176
P-36-008927	CA-SBR-008927H	Resource Name - MKLA 9706-1	Site	Historic	AH04 (Privies/dumps/trash scatters)	1997 (LEARCH, M AND K. SWOPE)	
P-36-010330	CA-SBR-010330H	Resource Name - Union Pacific Railroad; Other - Southern Pacific Railroad; Other - West Line Basin Alignment; Other - Union Pacific Railroad Crossing at Anderson Street; Other - 19-186112	Structure, Object	Historic	AH07 (Roads/trails/railroad grades); HP39 (Other) - Railroad	1999 (S. Ashkar, Jones & Stokes Associates, Inc.); 2002 (Goodwin, R., LSA Associates, Inc.); 2008 (Harper, C.D., SWCA); 2010 (Tibbet, C., LSA Associates, Inc.); 2012 (Paul, Daniel D., ICF International)	SB-04335, SB-05495, SB-05614, SB-06720, SB-07451, SB-07666, SB-07955
P-36-012595		Resource Name - Sprint Telecom Fac Candidate SB60XC817A; OHP Property Number - 152580	Building	Historic	HP02 (Single family property)	2004 (TANIGUCHI, MBA)	SB-04866
P-36-015135		Resource Name - San Bernardino County Museum; PHI - SBR-1	Building	Historic	HP39 (Other)	(Dr. G.A. Smith); 1969; 1975	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-36-020332		10076 & 10074 Cedar, Blm; Resource Name - Bloomington Chamber of Commerce & Library	Building	Historic	HP06 (1-3 story commercial building); HP13 (Community center/social hall); HP14 (Government building); HP15 (Educational building)	2003 (Judith Marvin, LSA)	
P-36-020333		10056 Cedar Ave, Bloomington; Resource Name - Renner House	Building	Historic	HP02 (Single family property); HP04 (Ancillary building)	2003 (Judith Marvin, LSA)	
P-36-020334		10044 Cedar Ave, Bloomington; Resource Name - Norden House	Building	Historic	HP02 (Single family property)	2003 (Judith Marvin, LSA)	
P-36-020335		18821 Lynwood St, Bloomington; Resource Name - Jones House	Building	Historic	HP02 (Single family property); HP04 (Ancillary building)	2003 (Judith Marvin, LSA)	
P-36-020336		10169 Church St, Bloomington; Resource Name - Leonard House	Building	Historic	HP02 (Single family property); HP04 (Ancillary building)	2003 (Judith Marvin, LSA)	
P-36-020568		18338 Valley Blvd, Bloomington; Resource Name - CRM TECH 2020-1	Building	Historic	HP02 (Single family property)	2007 (SMALLWOOD, CRM TECH)	SB-05460
P-36-020569		Resource Name - Rear Residence	Building	Historic	HP02 (Single family property)	2007 (Bai Tang, CRM Tech)	SB-05460
P-36-020570		Resource Name - Gabe's Auto Upholstery	Building	Historic	HP02 (Single family property)	2007 (Bai Tang, CRM Tech)	SB-05460
P-36-020571		18412 Valley Blvd, Bloomington; Resource Name - American Recycling	Building	Historic	HP02 (Single family property)	2007 (Bai "Tom" Tang, CRM Tech)	SB-05460
P-36-020572		18434 Valley Blvd, Bloomington; Resource Name - Clear Waters Pool Supply	Building	Historic	HP06 (1-3 story commercial building)	2007 (TANG, CRM Tech)	SB-05460
P-36-020573		18434 Valley Blvd, Bloomington; Resource Name - Bloomington Recycling	Building	Historic	HP06 (1-3 story commercial building)	2007 (TANG, CRM Tech)	SB-05460
P-36-021608		18687 Commercial St, Bloomington; Resource Name - CNX-6	Building	Historic	HP02 (Single family property)	2008 (Jeremy Hollins, URS)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-36-021609		1030 Bloomington Ave, Bloomington; Resource Name - Tank Farm; Other - CNX-7	Building	Historic	HP08 (Industrial building)	2008 (Jeremy Hollins, URS)	
P-36-021610		9935 Bloomington Ave, Bloomington; Resource Name - Tank Farm; Other - CNX-8	Building	Historic	HP02 (Single family property)	2008 (Jeremy Hollins, URS)	

APPENDIX C:

Native American Consultation

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

August 12, 2019

Jeanette McKenna
McKenna et al.

VIA Email to: Jeanette.mckennaetal@gmail.com

RE: Cedar villas Residential Development Project, San Bernardino County

Dear Ms. McKenna:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Bernardino County
8/12/2019

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Rroad — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838 — Kitanemuk, Vanyume, Tataviam
Newhall, CA, 91322
Phone: (503) 539 - 0933
Fax: (503) 574-3308
ddyocum@comcast.net

San Manuel Band of Mission Indians
Lee Clauss, Director of Cultural Resources
26569 Community Center Drive — Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Fax: (909) 864-3370
lclauss@sanmanuel-nsn.gov

Serrano Nation of Mission Indians
Mark Cochrane, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (909) 528 - 9032
serranonation1@gmail.com

Serrano Nation of Mission Indians
Wayne Walker, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (253) 370 - 0167
serranonation1@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Cedar Villas Residential Development Project, San Bernardino County.

McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

San Manuel Band of Mission Indians
Attn: Lee Clauss, Director of Cultural Resources
26569 Community Center Drive
Highland, California 92346

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Ms. Clauss:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

The CSUF-SCCIC completed the archaeological records search (enclosed) and determined the property was not previously surveyed, but twenty-three (23) studies have been completed within one mile of the project area and seven historic properties and 23 cultural resources have been identified within one mile. The cultural resources include both prehistoric and historic resources, but are dominated by historic structures.

A recent survey of the project area yielded no evidence of cultural resources. The Lead Agency for this project is the City of Rialto and the City is responsible for SB-18 and/or AB-52 consultation. Please review the enclosed data and contact me if you have any questions.

Sincerely,

Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

6008 Friends Avenue, Whittier, California 90601-3724 or 1941 E. Pegasus Drive, Tempe, Arizona 85283
(562) 696-3852 (CA Office) (480) 664-0682 (AZ Office) Cell 562-754-7712
Email = jeanette.mckennaetal@gmail.com

McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Gabrielino Band of Mission Indians – Kizh Nation
Attn: Andrew Salas
P.O. Box 393
Covina, California 91723

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Salas:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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(562) 696-3852 (CA Office) (480) 664-0682 (AZ Office) Cell 562-754-7712
Email = jeanette.mckennaetal@gmail.com

McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Gabrielino/Tongva San Gabriel Band of Mission Indians
Attn: Anthony Morales
P.O. Box 693
San Gabriel, California 91776

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Morales:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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Sincerely,

Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

6008 Friends Avenue, Whittier, California 90601-3724 or 1941 E. Pegasus Drive, Tempe, Arizona 85283
(562) 696-3852 (CA Office) (480) 664-0682 (AZ Office) Cell 562-754-7712
Email = jeanette.mckennaetal@gmail.com

McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Gabrielino/Tongva Nation
Attn: Sandonne Goad
106 ½ Judge John Aiso Street, Suite 231
Los Angeles, California 90012

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Ms. Goad:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

The CSUF-SCCIC completed the archaeological records search (enclosed) and determined the property was not previously surveyed, but twenty-three (23) studies have been completed within one mile of the project area and seven historic properties and 23 cultural resources have been identified within one mile. The cultural resources include both prehistoric and historic resources, but are dominated by historic structures.

A recent survey of the project area yielded no evidence of cultural resources. The Lead Agency for this project is the City of Rialto and the City is responsible for SB-18 and/or AB-52 consultation. Please review the enclosed data and contact me if you have any questions.

Sincerely,

Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

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Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Gabrielino Tonga Indians of California Tribal Council
Attn: Robert Dorame
P.O. Box 490
Bellflower, California 90707

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Dorame:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Gabrielino-Tongva Tribe
Attn: Charles Alvarez
23454 Vanowen Street
West Hills, California 91307

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Alvarez:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Morongo Band of Mission Indians
Attn: Denise Torres, Cultural Resources Manager
12700 Pumarra Road
Banning, California 92220

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Ms. Torres:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Morongo Band of Mission Indians
Attn: Robert Martin, Chairman
12700 Pumarra Road
Banning, California 92220

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Martin:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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Sincerely,

Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

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McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

San Fernando Band of Mission Indians
Attn: Donna Yocum, Chairperson
P.O. Box 221838
Newhall, California 91322

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Ms. Yocum:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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Sincerely,

Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

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McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Serrano Nation of Mission Indians
Attn: Mark Cochrane, Co-Chairperson
P.O. Box 343
Patton, California 92369

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Cochrane:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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Jeanette A. McKenna, Principal
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McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA, HonDL
Reg. Professional Archaeologist
Owner and Principal Investigator

August 21, 2019

Serrano Nation of Mission Indians
Attn: Wayne Walker, Co-Chairperson
P.O. Box 343
Patton, California 92369

RE: Cedar Villas Project, Rialto, San Bernardino Co., CA.

Mr. Walker:

McKenna et al. is initiating the Phase I cultural resources investigations for the proposed Cedar Villas Project in the City of Rialto, San Bernardino County, California. The project area is currently vacant (3.17 acres) located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This location is north of I-10 and San Bernardino Avenue and on the east side of Cedar Avenue (ass attached graphics.

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Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

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Email = jeanette.mckennaetal@gmail.com

APPENDIX D:

Paleontological Overview

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

5 August 2019

McKenna et al.
6008 Friends Avenue
Whittier, California 90601-3724

Attn: Jeanette A. McKenna

re: Paleontological resources for the proposed Cedar Villas Project, McKenna et al. Job No. 19.2014, in the City of Rialto, San Bernardino County, project area

Dear Jeanette:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Cedar Villas Project, McKenna et al. Job No. 19.2014, in the City of Rialto, San Bernardino County, project area as outlined on the portion of the Fontana USGS topographic quadrangle map that you sent to me on 22 July 2019. We do not have any vertebrate fossil localities that lie directly within the proposed project area boundaries, but we do have localities somewhat nearby that occur in sedimentary deposits similar to those that occur in the proposed project area, either at the surface or at depth.

All or almost all of the proposed project area has surficial sediments composed of younger Quaternary Alluvium, with possibly surficial deposits of older Quaternary Alluvium along the eastern border, both derived broadly as alluvial fan deposits from the San Gabriel Mountains to the north. In this vicinity these deposits typically do not contain significant vertebrate fossils in the uppermost layers, but they may be underlain at relatively shallow depth by older sedimentary deposits that do contain significant fossil vertebrate remains. Our closest fossil vertebrate locality from similar older Quaternary deposits is LACM 7811, west-southwest of the proposed project area west of Mira Loma along Sumner Avenue, that produced a fossil specimen of whipsnake, *Masticophis*, at a depth of 9 to 11 feet below the surface. Further to the southwest, between Corona and Norco, our vertebrate fossil locality LACM 1207 produced a fossil specimen of deer, *Odocoileus*, at unstated depth.

Grading or shallow excavations in the uppermost layers of soil and Quaternary Alluvium in the proposed project area are unlikely to encounter significant fossil vertebrate remains. Deeper excavations that extend down into older Quaternary sediments, however, may well encounter significant vertebrate fossils. Any substantial excavations below the uppermost layers, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

APPENDIX E:

Photographic Record

Overview from Center of Property (N)

Overview from Center of Property (S)

Overview from Center of Property (E)

Overview from Center of Property (W)

Overview from Center of Property (SE)

Overview from Center of Property (SW)

Overview from Center of Property (NW)

Overview from Center of Property (NE)

Example of Dense Vegetation (N)

APPENDIX F:

Supplemental Research Data

McKENNA et al. ASSESSOR SUMMARY
TOWNSHIP: 1S RANGE: 5W SECTION: 15 SCHOOL DISTRICT: BLOOMINGTON SERIES: 1 BOOK: 5 PAGE: 155 .
MISC. ADDITIONAL DATA: _____.

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1895			YEAR: 1896			YEAR: 1897			YEAR: 1898			YEAR: 1899			YEAR: 1900			YEAR: 1901			YEAR: 1902			YEAR: 1903		
2940	Semi-Tropic Land and Water	321	S-TL&W Co.			S-TL&W Co.			S-TL&W Co.			S-TL&W Co.			S-TL&W Co.			S-TL&W Co.			Fontana Land Development Co.			Fontana Land Development Co.			Fontana Land Development Co.		
	Company (S-TL&W Co.)	20 Ac.	800	---	---	800	---	---	600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

SERIES: 1 BOOK: 5 PAGE: 149 .

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1904			YEAR: 1905			YEAR: 1906			YEAR: 1907			YEAR: 1908			YEAR: 1909			YEAR: 1910			YEAR: 1911			YEAR: 1912		
2820	Semi-Tropic Land and Water	321	Fontana Land Development Co.			Fontana Land Development Co.			California Fruit Growers' Assoc.			California Fruit Growers' Assoc.			George E. North			H.G. Dent			H.G. Dent			H.G. Dent			L.A. Trust & Savings Bank		
	Company (S-TL&W Co.)	20 Ac.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

SERIES: 1 BOOK: 5 PAGE: 12 .

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1913			YEAR: 1914			YEAR: 1915			YEAR: 1916			YEAR: 1917			YEAR: 1918			YEAR: 1919			YEAR: 1920			YEAR: 1921		
2820	Semi-Tropic Land and Water	321																Anna F. Leach			Anna F. Leach			Dorothy Leach (Hardy)			Dorothy Leach (Hardy)		
	Company (S-TL&W Co.)	20 Ac.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3000	---	---	3000	---	---	3000	---	---	3000	---	---

SERIES: 1 BOOK: 5 PAGE: 12 .

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1922			YEAR: 1923			YEAR: 1924			YEAR: 1925			YEAR: 1926			YEAR: 1927			YEAR: 1928			YEAR:			YEAR:		
29	Semi-Tropic Land and Water	321 N ½	A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel								
	Company (S-TL&W Co.)	10 Ac.	---	---	---	1250	100	---	1350	250	---	1350	350	---	1350	350	---	1350	350	---	1430	350	---						
31	Semi-Tropic Land and Water	321 S ½	H.G. Haughty			H.G. Haughty			H.G. Haughty			H.G. Haughty			H.G. Haughty			C.S. & Amy Blanchard			C.S. & Amy Blanchard								
	Company (S-TL&W Co.)	9.55Ac.	---	---	---	1250	130	---	1250	200	---	1250	200	---	1250	200	---	1250	200	---	1430	200	---						

SERIES: 2 BOOK: 38A PAGE: 13.

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1929			YEAR: 1930			YEAR: 1931			YEAR: 1932			YEAR: 1933			YEAR: 1934			YEAR: 1935			YEAR: 1936			YEAR: 1937		
201	Semi-Tropic Land and Water	321 N ½	A.P. & Margaret E. Fassel			A.D. & Bertha Litts			A.D. & Bertha Litts			A.D. & Bertha Litts			A.D. & Bertha Litts			Mary W. Harper			Mary W. and L.M. Harper			Mary W. and L.M. Harper			Mary W. and L.M. Harper		
	Company (S-TL&W Co.)	W 6.8 Ac.	1430	350	---	1430	350	---	1430	350	450	1430	350	450	780	---	360	780	---	360	780	---	360	1170	---	540	1170	---	540
205	Semi-Tropic Land and Water	321 N ½	A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.P. & Margaret E. Fassel			A.D. & Bertha Litts			A.D. & Bertha Litts			Mary W. and L.M. Harper			Wm. H. & Kate E. Reisinger			Wm. H. & Kate E. Reisinger		
	Company (S-TL&W Co.)	E 2.8 Ac.	---	---	---	---	---	---	---	---	---	---	---	---	360	150	---	360	150	---	360	150	---	540	230	---	540	230	---
209	Semi-Tropic Land and Water	321 S ½	C.S. & Amy Blanchard			C.S. & Amy Blanchard			C.S. & Amy Blanchard			W.A. & Margaret W. Warren			W.A. & Margaret W. Warren			Security First Nat'l. Bank of L.A.			Security First Nat'l. Bank of L.A.			James R. & Nellie M. Porter			James R. & Nellie M. Porter		
	Company (S-TL&W Co.)	9.55Ac.	1430	200	100	1430	200	100	1430	200	---	1430	200	---	1140	160	---	1140	160	---	1140	160	---	1710	240	---	1710	240	---

SERIES: 2 BOOK: 105A PAGE: _____.

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1938			YEAR: 1939			YEAR: 1940			YEAR: 1941			YEAR: 1942			YEAR: 1943			YEAR: 1944			YEAR: 1945			YEAR:		
333	Semi-Tropic Land and Water	321 N ½	Mary W. and L.M. Harper			Mary W. and L.M. Harper			Mary W. and L.M. Harper			Mary W. and L.M. Harper			Federal Farm Mortgage Corp.			J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson					
	Company (S-TL&W Co.)	W 6.8 Ac.	1170	---	540	1170	---	540	1170	---	540	1170	---	540	1170	---	540	1170	---	540	1170	---	750	1170	---	750			
325	Semi-Tropic Land and Water	321 N ½	Wm. H. & Kate E. Reisinger			Wm. H. & Kate E. Reisinger			Wm. H. & Kate E. Reisinger			Wm. H. & Kate E. Reisinger			Wm. H. & Kate E. Reisinger			Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel					
	Company (S-TL&W Co.)	E 2.8 Ac.	540	230	---	540	230	---	540	230	---	540	230	---	540	230	---	540	230	---	540	230	---	540	230	---			
317	Semi-Tropic Land and Water	321 S ½	James R. & Nellie M. Porter			James R. & Nellie M. Porter			James R. & Nellie M. Porter			James R. & Nellie M. Porter			James R. & Nellie M. Porter			James R. & Nellie M. Porter			James R. & Nellie M. Porter			Wilmer D. & Vena M. Parker					
	Company (S-TL&W Co.)	9.55Ac.	1710	240	---	1710	60	---	1710	60	---	1710	60	---	1710	60	---	1710	60	---	1710	60	---	1710	60	---			

SERIES: 2 BOOK: 151A PAGE: 3.

LINE	DESCRIPTION	ACRES/LOT	YEAR: 1946			YEAR: 1947			YEAR: 1948			YEAR: 1949			YEAR: 1950			YEAR: 1951			YEAR:			YEAR:			YEAR:		
409	Semi-Tropic Land and Water	321 N ½	J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson			J.H. & Susie M. Dickenson											
	Company (S-TL&W Co.)	W 6.8 Ac.	1360	---	750	1700	---	940	1700	---	940	1700	---	940	1700	---	940	---	---	---									
401	Semi-Tropic Land and Water	321 N ½	Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel			Matthew J. & Alice E. Reibel											
	Company (S-TL&W Co.)	E 2.8 Ac.	540	230	---	680	290	---	680	290	---	380	440	---	680	440	---	---	---	---									
417	Semi-Tropic Land and Water	321 S ½	Wilmer D. & Vena M. Parker			Wilmer D. & Vena M. Parker			Wilmer D. & Vena M. Parker			Wilmer D. & Vena M. Parker			Wilmer D. & Vena M. Parker			Wilmer D. & Vena M. Parker											
	Company (S-TL&W Co.)	E 6.32 Ac.	1130	60	---	1410	60	---	1410	80	---	1410	360	---	1410	360	---	---	---	---									
421	Semi-Tropic Land and Water	321 S ½	Preston D. & Lena A. Cloud			Preston D. & Lena A. Cloud			James R. & Marion B. Hart			James R. & Marion B. Hart			James R. & Marion B. Hart			James R. & Marion B. Hart											
	Company (S-TL&W Co.)	W 3.23 Ac.	580	---	---	730	---	---	760	---	---	760	---	---	760	---	---	---	---	---									

Whole section to

9

A. J. Pope
Nov 6. 1868

10

A 2

J R Brandon
Nov 5 1868.

Whole

Wm

Nov

A Donation in

A 92

John W. Craig
3200 = 3960

16

G. Johnson

Whole

15

Section to

Whole

A. J. Pope
Nov 6 1868

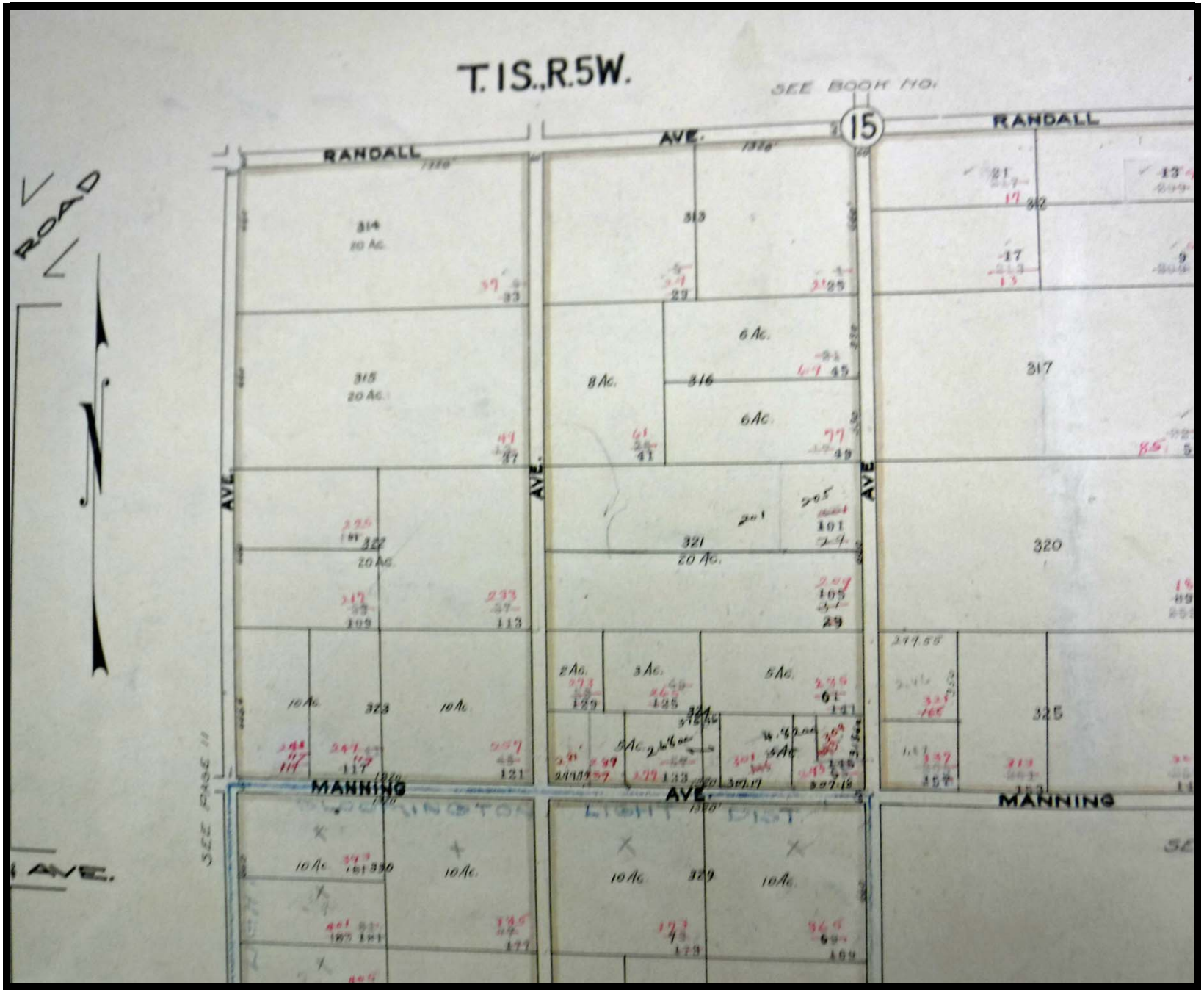
Wm

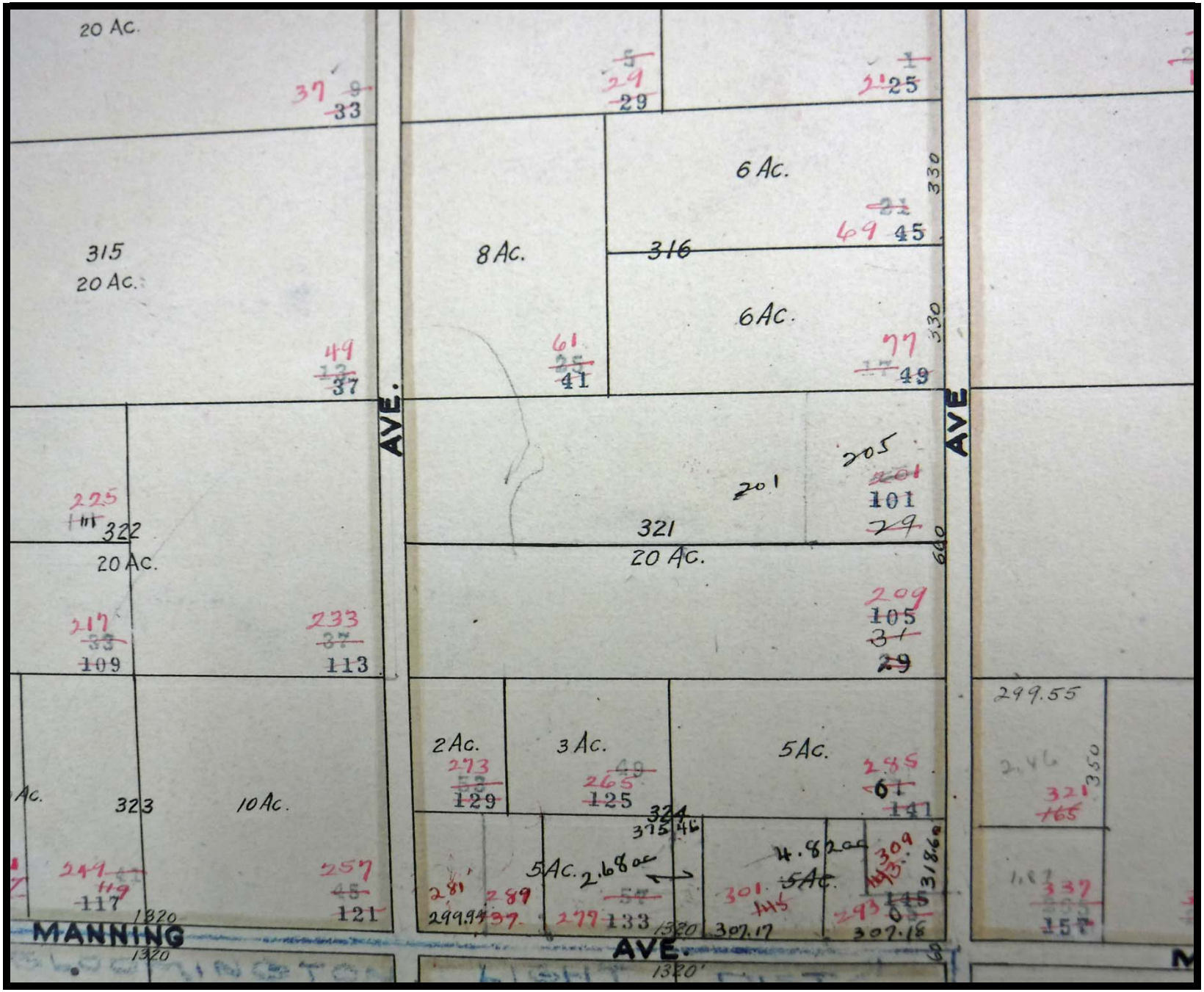
Nov 6

A 3

A'

A'


T.1S.,R.5W.
SEE BOOK NO.
15
RANDALL
AVE.
RANDALL
RANDALL
AVE.
AVE.
AVE.
MANNING
AVE.
MANNING
SEE PAGE 11
ROAD
AVE.
314
20 Ac.
313
315
20 Ac.
8 Ac.
6 Ac.
316
6 Ac.
317
322
20 Ac.
321
20 Ac.
320
10 Ac.
323
10 Ac.
2 Ac.
3 Ac.
5 Ac.
325
10 Ac.
10 Ac.
10 Ac.
329
10 Ac.


20 Ac.
315
20 Ac.
8 Ac.
6 Ac.
316
6 Ac.
AVE.
AVE
321
20 Ac.
322
20 Ac.
2 Ac.
3 Ac.
5 Ac.
323
10 Ac.
5 Ac.
MANNING
AVE.
1320'
299.55

APPENDIX G:

California DPR-523 Forms

State of California
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #

HRI #

Trinomial

Other Listings:

Review Code: 6Z Reviewer: Jeanette A. McKenna Date: Aug. 25, 2019

 *Resource Name or # (assigned by recorder) James R. and Marion B. Hart Property

P1. Other Identifier: APN 0250-091-25 and -26

*P2. Location Not for Publication X Unrestricted

*P2a. County: San Bernardino

P2b. USGS 7.5' Quad: Fontana Date: 1981 T 1 S ; R 5 W ; SE ¼ of SW ¼ of Sec. 15 ; S.B.B.M.

P2c. Address: Not Applicable City: Rialto Zip: 92376

P2d. UTMs: Zone: 11 SEE CONTINUATION SHEETS mE mN

P2e. Other Locational Data: (e.g.: parcel #, directions to resource, elevation, etc., as appropriate)
North of I-10; North of San Bernardino Avenue and east side of Cedar Avenue.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.) 3.17 acre property; currently vacant (once involved orchard development). Proposed for development as a residential complex.

P3b. Resource Attributes: (List attributes and codes.) HP-31 (Urban open space)

*P4. Resources Present: □ Building □ Structure □ Object □ Site

□ District □ Element of District X Others (Isolate, etc.) Post-1948 property boundaries

P5a. Photo or Drawing (Photo Required for Buildings, Structures, and Objects)

P5b: Description of Photo:
Aerial (2019)

*P6. Date of Construction/Age
X Historic □ Prehistoric □ Both

*P7. Owner and Address:
Redhill Partners
c/o Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408

*P8. Recorded by: McKenna et al.
Jeanette A. McKenna
6008 Friends Avenue
Whittier CA 90601-3724

*P9. Date Recorded: Aug. 25, 2019

*P10. Survey Type: Phase I Survey

*P11. Report Citation: (Cite survey report and other sources, or enter "None.") McKenna, Jeanette A. (2019) – A Phase I Cultural Resources Investigation for the Proposed Cedar Villas Residential Development on Cedar Avenue, City of Rialto, San Bernardino County, California – APNs 0250-091-25 and -26. On file, McKenna et al., Whittier, California.

*Attachments □ NONE X Location Map □ Sketch Map X Continuation Sheet □ BSO Record

X Archaeological Record □ District Record □ Linear Feature Record □ Milling Station Record

□ Rock Art Record □ Artifact Record □ Photographic Record □ Other (List): Photos

A1. Dimensions: a. Length: **426 ft. (E/W)** b. Width: **400 ft. (N/S)**

Method of Measurement: □ Paced □ Taped □ Visual Estimate **X** Other

Method of Determination : (check any that apply) □ Artifacts □ Features □ Soil

□ Vegetation □ Topography □ Cut bank □ Animal Burrow □ Excavation

X Property Boundary □ Other:

Reliability of Determination: □ High **X** Medium □ Low □ Explain:

Limitations: (Check any that apply) □ Restricted Access □ Paved/Built Over □ Vegetation

□ Disturbances □ Site Limits Incompletely Defined **X** Other: (Explain) **Estimated by maps**

A2. Depth: □ NONE **X** Unknown Method of Determination:

A3. Human Remains: □ Present **X** Absent □ Possible □ Unknown (Explain)

A4. Features: (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.) **NONE**

A5. Cultural Constituents: (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.)
NONE – site designation based on historic land-use research

A6. Were Specimens Collected? **X** No □ Yes (If yes, attach Artifact record or catalo and identify where specimens are curated.)

A7. Site Condition: □ Good □ Fair **X** Poor

Describe Disturbances: Year of disking following removal of trees

A8. Nearest Water: (Type, distance, and direction) **Not applicable (urban setting)**

A9. Elevation(s): 1148 ft. AMSL

A10. Environmental Setting: (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.) **URBAN – historically Coastal Sage Scrub and agricultural**

A11. Historical Information: Privately owned since ca. 1892

A12. Age: □ Prehistoric □ Protohistoric □ 1542-1769 □ 1769-1848 □ 1848-1880

□ 1880-1914 □ 1914-1945 **X** 1945-1965 □ Post-1965 □ Undetermined

A13. Interpretations: (Discuss data potential, function(s), ethnic affiliation, or other interpretations)
Property was carved out of T1S, R5W, Section 15 – finally to be defined in ca. 1948

A14. Remarks: Property slated for residential development

A15. References (Documents, Informants, Maps, and other references) **McKenna, Jeanette A. (2019)**

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photographic Record) **Digital, on file**

Original Media/Negatives Kept At: McKenna et al., Whittier, CA

A17. Form Prepared by: **Jeanette A. McKenna, Principal** jeanette.mckennaetal@gmail.com

Affiliation and Address: **6008 Friends Avenue**
Whittier, California 90601-3724
(562) 696-3852

Date: Aug, 25, 2019

State of California
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

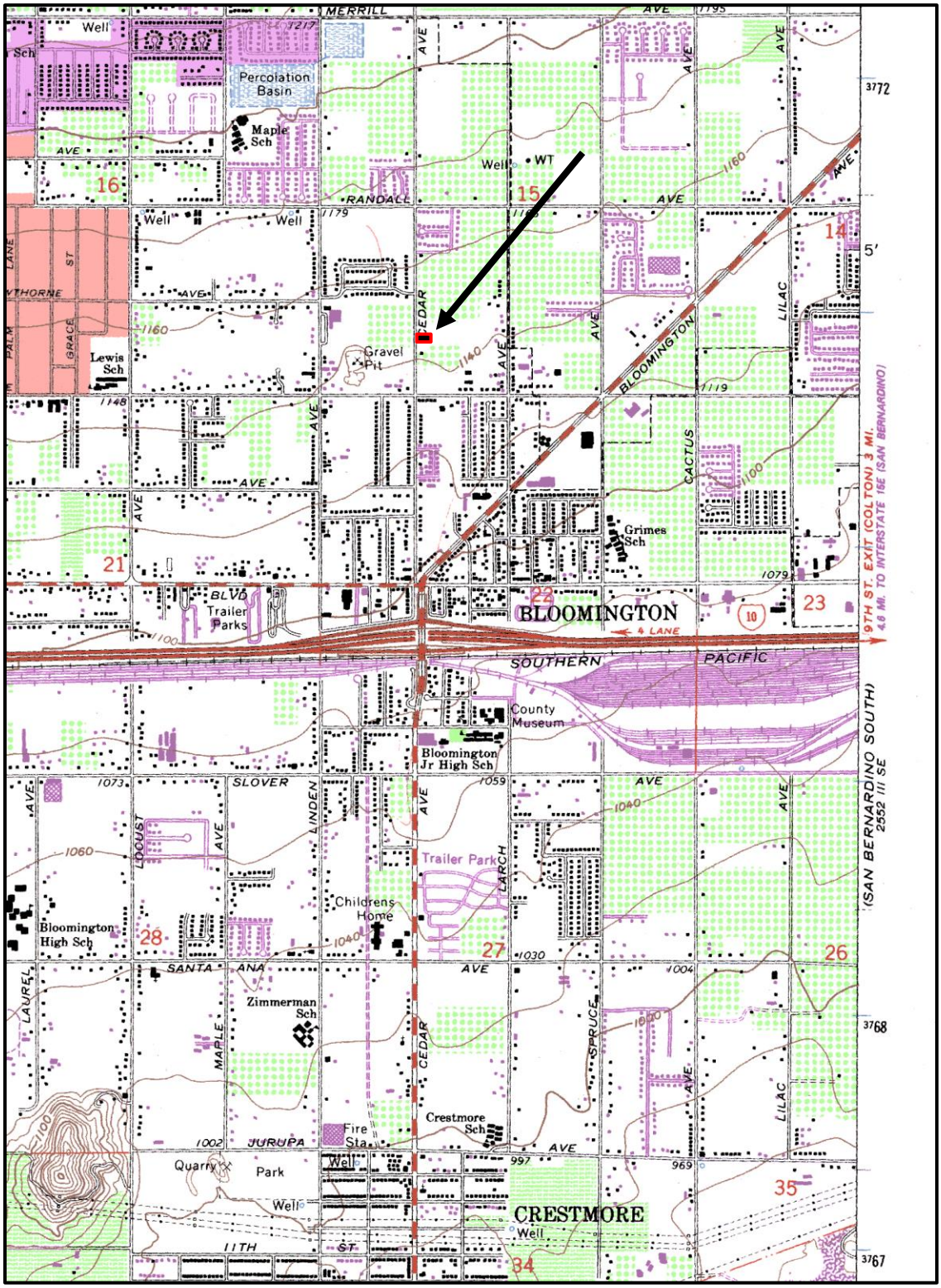
Primary #

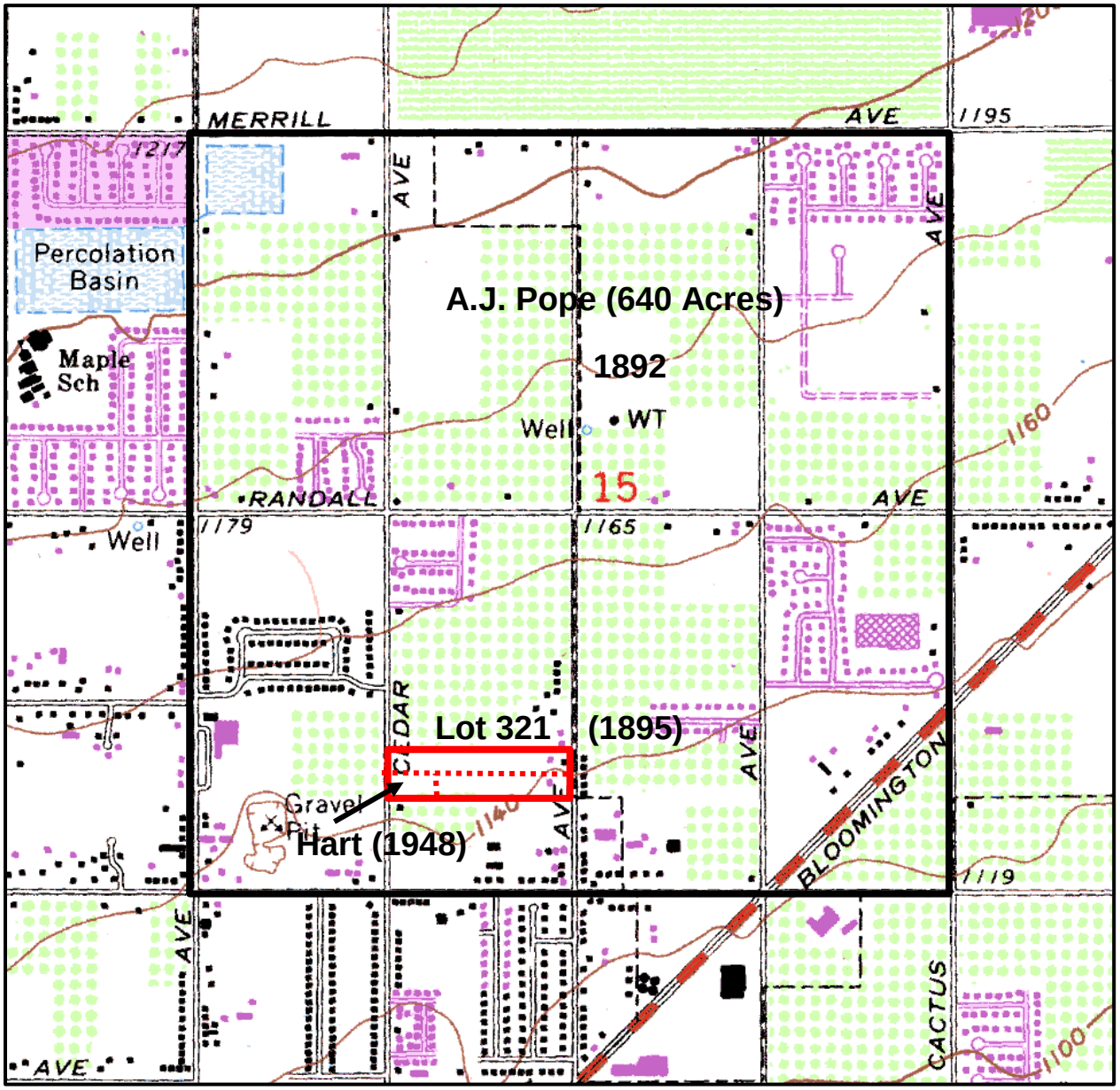
HRI #

Trinomial

Page 3 of 9 *Resource Name or # (assigned by recorder) James R. and Marion B. Hart Property

*Map Name: USGS Fontana Quad *Scale 1:64,000 *Date of Map 1981





A.J. Pope = 640 Acres
Semi-Tropic L & W Co., Lot 321 = 20 Acres
Wilmer and Vena Parker, S ½ Lot 321 = 9.55 Acres
James R. and Marion B. Hart, W 3.23 Acres of S ½ Lot 321
Minor Adjustment = 3.17 Acres (Current Project Area)


Wisteria Ct
W Woodcrest St
S Vine Ave
lanzanita Dr
S Church Ave
S Vine A
dar Ave
W Miramont St


FOR SALE
AMY WANG
909-997-1521

The James R. and Marion B. Hart property is a 3.17 acre property on the east side of Cedar Avenue, north of San Bernardino Avenue. This property is located in Township 1 South, Range 5 West, and the SE ¼ of the SW ¼ of Section 15. This property is currently vacant, but surrounded with modern residential developments and is representative of one of the last areas of open space in the vicinity. The UTM coordinates for the four corners of this property were calculated in both NAD 27 and NAD 83 (see below). The property elevation averages 350 meters above mean sea level (1,148 feet AMSL) and is essentially flat and accessed from Cedar Avenue.

Table 1. UTM Coordinates Defining the Current Project Area.

Point	NAD 83		NAD 27	
	Easting	Northing	Easting	Northing
NW	463431	3771148	463511	3770951
SW	463461	3771048	463511	3770851
NE	463549	3771148	463629	3770951
SE	463549	3771048	463829	3770851

During historic times, the project area was within the historic boundaries of the Rancho Muscupiabe, granted to Michael White (Miguel Blanco) in 1843 (west of the Rancho San Bernardino). Summarizing White's ownership, to rancho was associated with the Serrano and White was "persuaded" to set up a rancho on the path used by raiding bands of nomadic indigenous people (not Serranos). He constructed his home near the Cajon Pass and the Mojave Trail, but abandoned the rancho after he lost his cattle herd to numerous raids.

The rancho was later claimed as public lands (1872) and made available for homesteading, purchase, or trade. As such, it was formally subdivided into Township/Range/Sections and, in this case, in Township 1 South, Range 5 West, Section 15.

In 1887, a "Map of the Town of Rialto" was filed, illustrating the historic core area of the town and the surrounding rural properties. An average rural "Lot" consisted of 20 acres of land – less the right-of-ways for roads. In this case, the rural areas were identified as being associated with the holding of the Semi-Tropic Land and Water Company. The Hart property was within Lot 321 of the Semi-Tropic lands.

In 1892, Cave prepared maps of San Bernardino County based on Township and Range. His map for Township 1 South, Range 5 West, Section 15, identified the owner of the entire Section as A.J. Pope. It also illustrates the "Road to San Bernardino" crossing the southern half of the Section and running very close to the project area.

A.J. Pope was an individual that owned numerous sections in this area – Section 15 being only a portion of his vast holdings. The 640 acres of Section 15, in 1892, were undivided. Subsequent research confirmed, by 1895, this Section reverted back to the Semi-Tropic Land & Water Company – holding it until 1900. By 1895, the land in Section 15 was subdivided by the Semi-Tropic Land & Water Company, allowing for smaller property purchases.

In 1901, the 20 acre Lot 321 was one of many lots transferred to the Fontana Land Development Company and, in 1906, it was transferred to the California Fruit Growers' Association, suggesting Lot 321 was under cultivation. However, it was not, not at that time. No improvements were listed for Lot 321 between 1901 and 1907. After 1907, the property (20 acres) was sold numerous times, all without improvements, including:

1908	George E. North
1909-1911	H.G. Dent
1912-1917	Los Angeles Trust and Savings Banl
1917-1919	Anna F. Leach
1920-1921	Dorothy Leach Hardy

Dorothy Leach Hardy sold her property in 1922 – selling the northern ½ (10 acres) to A.P. and Margaret Fassel and the southern ½ (9.55 acres) to H.G. Haughty. In 1923, each new owner improved their holdings with modest structural improvements ($100 and $130, respectively). The Fassels held the northern half until 1929. Haughty sold the southern acreage to C.S. and Amy Blanchard in 1927 (until 1931).

Present-day Parcels 0250-091-25 and -26 are legally described as being within the southern half of Lot 321, making them part of the holdings of C.S. and Amy Blanchard (still owning 9.55 acres. In 1932, the Blanchards sold their land to W.A. and Margaret W. Warren (with the modest improvements valued at $160 – on the eastern extent of the property). The Security First National Bank of Los Angeles claimed the property in 1934-1935, selling it to James R. and Nettie M. Porter in 1936. At this time, the land was valued at $1710 and the improvements at $240. The property was transferred to Wilmer D. and Vena M. Parker in 1945 and, in 1946, the Parkers subdivided the 9.55 acres into two lots: the eastern 6.32 acres (with the improvements) were kept by the Parkers and the western 3.23 acres were sold to Preston D. and Lena A. Cloud. No structural improvements or tree values were listed by the Assessor. James R. and Marion B. Hart purchased the 3.23 acres (fronting Cedar Avenue) in 1948 and were still the listed owners in 1951.

There is a data gap between 1951 and 1982, when the owner of the project area (now 3.17 acres with the minor lot line adjustment of Parcel -25) was identified as Ernest (and Joanne C.) Morelli. The Morellis married in San Bernardino in 1964, suggesting they did not purchase the property until after 1964. Between 1985 and 2004, the owner was George Tsakanis. Subsequently, between 2004 and 2019, the legal owner has been listed as Redhill Partners. No improvements were recorded for this property (3.17 acres), while improvements were listed for properties to the south, east, and north. Despite the Assessor notes (no values), an aerial photograph dating to 1948 illustrates young trees planted on the property – during the Hart ownership. The trees are still evident on the 1968 aerial photograph.

In summarizing the historic land use of the project area, it was confirmed the property had numerous owners between 1892 and 1948. The first improvements appear in 1948 and during the Hart ownership. Prior to 1948, the land was unimproved and unoccupied. The trees (orchard) were present between 1948 and 1968 – under the Hart and Morelli ownerships (possibly others in between these two documented owners; possibly leased to neighbors with other orchard development). Once the trees were removed – likely be the Morellis – the land was left vacant and the boundaries well established.

APPENDIX D
GEOTECHNICAL INVESTIGATION

PROFESSIONAL ENGINEERS CONSULTING, Inc.
GEOTECHNICAL ENVIRONMENTAL TESTING INSPECTION
25422 Trabuco Rd. #105 Lake Forest CA 92630 Phone 949-768-3693 pecigeo@gmail.com

GEOTECHNICAL REPORT

Revised from November 20, 2004

SITE:

vacant lot, Cedar Avenue, Rialto, CA 92376
(APN's: 205-091-25 and 250-091-26)

DATE:

August 2, 2019

Project Number:

SL0719

PREPARED FOR:

Steve Landis
Monte Vista Assets, Inc.
8628 Hillside Road
Alta Loma, CA 91701

PROFESSIONAL ENGINEERS CONSULTING Inc.
GEOTECHNICAL ENVIRONMENTAL TESTING INSPECTION
25422 Trabuco Rd. #105 Lake Forest, CA 92630 Phone 949-768-3693 pecigeo@gmail.com

August 2, 2019

Mr. Steve Landis
Monte Vista Assets, Inc.
8628 Hillside Road
Alta Loma, CA 91701

Subject: Soil Report, vacant lot, Cedar Avenue, Rialto, CA 92376 (APN's: 205-091-25 and 250-091-26)

Dear Mr. Landis:

Professional Engineers Consulting, Inc. is pleased to present you this summary of geotechnical investigations for your property within the lot located at Cedar Avenue, Rialto, CA 92376 (APN's: 205-091-25 and 250-091-26)

It is our opinion that thee site can be developed from geotechnical perspective, provided the recommendations presented in the attached report are implemented into design and construction.

This opportunity to be of professional service is greatly appreciated. Should you have any questions, please contact our office at 949-768-3693.

Respectfully Submitted,

PROFESSIONAL ENGINEERS CONSULTING, Inc.

REGISTERED PROFESSIONAL ENGINEER
SAEED SHAHIDI
No. 51711
Exp. 6/30/20
CIVIL
STATE OF CALIFORNIA

Saeed Shahidi
Registered Civil Engineer

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Continued.....

INTRODUCTION

This report was prepared by Professional Engineers Consulting, Inc. for Mr. Steve Landis to provide Geotechnical investigation for the property within the lot located at Cedar Avenue, Rialto, CA 92376 (APN's: 205-091-25 and 250-091-26)

The scope of this study is designed to determine and evaluate the surface and subsurface conditions on the subject site and to present preliminary recommendations for the foundation systems and grading requirements as they relate to the development of the residential lots. Currently, with the exception of Tract map architectural or engineering plans are not available to us. Therefore, our conclusions and recommendations are preliminary and subject to modification depending on potential changes and the final layout of the structures.

SCOPE OF WORK

- Laboratory testing of selected soil and/or bedrock samples, including visual classification at the site.
- Preparation of Geotechnical Analysis, Including Bearing Values and Settlement.
- Preparation of a report presenting our findings, conclusions, and recommendations for the type of foundation and grading procedures.
- Site investigations, including trenching and studying the formation. Logging, field-testing.
- Preparing a geotechnical assessment of the site and determine the adverse conditions, if any such as liquefaction seismic problems.

SITE LOCATION & DESCRIPTION

The subject lot is a vacant land that is within the City of Rialto. The property is located on the east side of Cedar Avenue, north of San Bernardino Avenue, at approximately one-mile north of Interstate 10, and 5.5 miles west of Interstate 215.

The site consists of two lots with APNs 205-091-25 and 250-091-26. The area in general is fully developed with residential and commercial structures.

PROPOSED DEVELOPMENT

Ten single-family residents are to be constructed at the site. The structures are to be supported on continuous and isolated pad footing type foundations. Loads on the foundations are unknown but are not anticipated to exceed 50 kips per linear foot for column loads. The proposed floors will consist of continuous concrete slabs placed on finish grade and supported by footings. Finished floor elevations are anticipated to be at approximately + 2 % gradient from the street level and also in accordance with the City of Rialto design standards.

Surface drainage will be controlled by sloped concrete flatwork earth swales and area drains will be designed to carry surface water to drain outside the property. Subdrains shall also be installed within the wash areas.

Should details involved in final design vary from those outlined above, this firm should be notified for review and possible revision of our recommendations.

GROUNDWATER CONDITIONS

Groundwater was not encountered in our excavations during subsurface exploration groundwater level in this area is generally deep.

SEISMIC COEFFICIENTS

Per Seismic Coefficients (2016 California Building Code), followings are the recommended design values for this site:

Site coordinates

34.079854, -117.395912

Site Category

D

Mapped Spectral Acceleration

Ss=1.5 (G)
S1=0.6 (G)

Spectral Response Accelerations

Sms = 1.5(G)
Sm1 = 0.0(G)

Design Accelerations

Sds = 1.0(G)
Sd1 = 0.0(G)

LIQUEFACTION CONDITIONS

Liquefaction can occur when saturated loose and fine granular soils are subjected to excessive ground vibrations. Soil liquefaction is dependent upon three main variables; Depth to groundwater, granular soil, and the earthquake ground motions.

The subsurface mainly consists of decomposed hard sandy silty soil material, with gravel. Hard layers of sandstone were encountered at relatively shallow depth. Groundwater in this area is deep. The possibility of liquefaction at this site is low.

According to the geologic map from the county of San Bernardino (Fig 4), the site does not lie in an area with a potential for the liquefaction.

GEOTECHNICAL INVESTIGATIONS
FIELD STUDY

Geotechnical field studies consisting of site observations and subsurface exploration were conducted on October 29, 2004:

Total of five exploratory trenches were placed to depths of 10 to twelve feet to verify the subsurface conditions. Our Registered Civil Engineer the encountered formations. The trench logs are included in Appendix `B'. Approximate locations of trenches are shown on the plot plan on Fig.2.

Undisturbed samples of the soils were obtained at selected intervals. Undisturbed samples were obtained by driving a thin walled steel sampler with successive drops of a 25-pound weight having a free fall of 18 inches. Undisturbed soils were retained in close fitting moisture proof containers and transported to our laboratory. Grab samples were also taken to perform geotechnical laboratory tests.

The exploratory trenches used for subsurface exploration were backfilled with the native soil and with reasonable effort to restore the area to their original condition.

LABORATORY TESTING

The results of laboratory tests performed on disturbed, undisturbed, and remolded soil samples are presented in appendix "C". Following is a listing and brief explanation of the laboratory tests, which were performed as part of this study.

The remaining soil samples are stored in our laboratory for future reference. Unless notified to the contrary, all samples will be disposed of 30 days after this report.

SOIL CLASSIFICATION

The field classification of the soils was verified in the laboratory in general accordance with the Unified Soil Classification System. The final classification is shown on the boring logs.

FIELD MOISTURES AND DENSITIES

The field moisture content was determined for each of the disturbed and undisturbed soil samples. The dry density was also determined for each of the undisturbed samples. The dry density was is a determined in pound per cubic foot and the field moisture content is determined as a percentage of the dry weight of the soil. Both results are shown on boring logs.

DIRECT SHEAR TEST

Direct Shear test was performed in the Direct Shear Test Machine, which is of the strain control type in general with ASTM D-3080 procedure. Each sample was sheared under varying pressures normal to the face of the specimen to determine the shear strength (cohesion and angle of internal friction).

Samples were tested in a submerged condition. The results are listed in table 1. Shear tests were all performed on the remolded samples at 90% maximum dry density.

PARTICLE SIZE ANALYSIS

The procedure is repeated for a sufficient number of water contents to establish a relationship between the dry unit weight and the water content of the soil. This data, when plotted, presents a curvilinear relationship known as the compaction curve. The

values of optimum water content and modified maximum dry unit weight are determined from the compaction curve.

A specimen of the soil is washed over a 75-um (No. 200) sieve. Clay and other particles that are dispersed by the wash water, as well as water-soluble materials, are removed from the soil during the test. The loss is mass resulting from the wash treatment is calculated as mass percent of the original sample and is reported as the percentage of material finer than a 75-um (No. 200) sieve by washing.

Material finer than the 75-um (No. 200) sieve can be separated from larger particles much more efficiently and completely by wet sieving than through the use of dry sieving. Therefore, when accurate determinations of material finer than 75-um in soil are desired, this test method is used on the sample prior to dry sieving.

Usually the additional amount of material finer than 75-um obtained in the dry sieving process is a small amount. If it is large, the efficiency of the washing operation should be checked, as it could be an indication of degradation of the soil.

With some soils, particularly clayey soils, in order to keep the finer material from adhering to the larger particles, it will be necessary to soak the soil prior to washing it through the sieve. A deflocculent agent (dispersing agent) should be added to the soil when it is soaked.

FIELD OBSERVATION

Based on field observations from the samples obtained from all ten to twelve feet deep trenches, we can present the following:

Generally, the subsurface of the site consists of Sandy silty material, mostly derived from alluvium. Hard and heavily cemented gravelly material were encountered through the site, within four to twelve feet of depth.

Groundwater was not encountered in our trenches. In general the formation was consistent throughout the whole investigation.

CONCLUSIONS AND RECOMMENDATIONS

The subject property can be developed by using conventional footings with grade beams and slab-on-grade floors, provided that our enclosed conclusions and recommendations are implemented into the design criteria and project specifications. However, our conclusions are subject to review and modification after reviewing the plans and design specifications.

FOUNDATION DESIGN RECOMMENDATIONS

- For up to two stories. all exterior-building footings should be founded at a minimum depth of 24 inches below the lowest adjacent final grade. Interior footings may be founded at a minimum depth of 24 inches below the lowest adjacent final grade.

- All continuous footings should be reinforced with four No. 4 bars, two top and two bottom.

- Exterior isolated pad footings intended for support of root overhangs such as patio covers should be a minimum of 24 inches square, and founded at a minimum depth of 24 inches below the lowest adjacent final grade. The pad footings should be reinforced with No. 4 bars spaced 18 inches on centers, both ways, near the bottoms of the footings.

- Living area concrete floor slabs should be a full 5 inches thick an underlain with 3 inches of clean sand or gravel. All slabs should be reinforced with No. 3 bars spaced 18 inches on centers, both ways. All slab reinforcement should be supported on concrete chairs or bricks to ensure the desired placement near mid depth.

- Per 2016 Calgreen Residential Mandatory Measures, Division 4.5 - Environmental Quality (Interior Moisture Control), all concrete slab foundations or concrete slab-on-ground floors required to have a vapor retarder by the California Building Code, Chapter 19, or the California Residential Code, Chapter 5, respectively, shall also comply with this section: A 4-inch (101.6 mm) thick base of 1/2-inch (12.7 mm) or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete

- Garage floor slabs should be a full 5 inches thick and underlain with 4 inches of clean sand or gravel. Garage and parking slabs should be reinforced in a similar manner as living area slabs and poured separately from adjacent wall footings with a positive separation maintained with 3/8-inch minimum felt expansion joint materials, and then quartered with weakened plane joints. A 12-inch wide by 24-inch deep grade beam should also be provided across garage entrances. The grade beam should be reinforced with four No. 4 bars, two top and two bottom.

- Prior to placing concrete, the subgrade below all living area and garage slabs should be presoaked to achieve a moisture content that is 30 percent or greater above optimum moisture content. This moisture content should penetrate to a minimum depth of 12 inches into the subgrade

ALLOWABLE FOUNDATION PRESURE

The allowable foundation pressure value is 1,500 psf for footings having a minimum width and depth of 12 inches. Per 2016 code, no increase is allowed.

The above values are based on footings placed directly against compacted fill. In the case where footing sides are formed, all backfill against footings should be compacted to at least 90 percent of maximum dry density.

LATERAL RESISTANCE

A passive earth pressure of 150 pounds per square foot per foot of depth may be used to determine lateral bearing resistance for footings. Lateral sliding resistance coefficient should be 0.25. The above values are based on footings placed directly against bedrock or compacted fill. In the case where footing sides are formed, all backfill against footings should be compacted to at least 90 percent of maximum dry density.

SETTLEMENT

For structures, placed over the fill, the differential settlement is anticipated to be less than ½ inches. The majority of total and differential settlements are expected to occur during construction or shortly thereafter as building loads are applied.

RETAINING WALL CONSTRUCTION RECOMMENDATIONS

The retaining walls must be backfilled with non-cohesive granular materials available on the site, and provided with drainage devices such as weep holes or subdrains to prevent the build-up of hydrostatic pressures beyond the design values. Also, it is strongly recommended that all backfill material be compacted to a minimum of 90 percent relative compaction, as this is the density from which the pressure is calculated. This recommendation cannot be overemphasized.

A subdrain system shall be constructed behind and at the base of all retaining walls to allow drainage and to prevent buildup of excessive hydrostatic pressures. Typical subdrains may include weep holes with a continuous gravel gallery, perforated pipe surrounded by filter rock,

or other approved devices. Gravel galleries or filter material, if not properly designed and graded for the on-site soils, shall be enclosed in a geotextile fabric such as Mirafi 140N or a suitable equivalent to prevent infiltration of fines and clogging of the system.

Subdrains should maintain a positive flow gradient away from the retaining walls and have outlets that drain in a non-erosive manner.

Backfill directly behind retaining walls (If backfill width is less than 2 feet) may consist of 3/8 to 3/4 inch maximum diameter rounded to subrounded gravel. If wider areas are backfilled with gravels, the gravel shall be enclosed in a geotextile filter fabric.

If other types of soil or gravel are used for backfill, mechanical compacting methods will be necessary to obtain a relative compaction of at least 90% of maximum dry density. Backfill directly behind retaining walls shall not be compacted by wheel, track or other rolling by heavy construction equipment unless the wall is designed for the surcharge loading from the compaction equipment.

If gravel or other imported granular backfill is used behind the retaining wall, the upper 12 inches of backfill in unpaved areas shall consist of typical on-site soil compacted to a minimum of 90% of the laboratory maximum dry density. This will prevent the infiltration of surface runoff into the granular backfill and into the subdrain system.

Maximum dry density and optimum moisture content for backfill materials shall be determined in accordance with ASTM D-1557 procedures.

RETAINING WALL DESIGN PARAMETERS

Slope of adjacent ground	Active Pressure	Passive Pressure
LEVEL	30 pcf	400
4:1	35 pcf	300
3:1	40 pcf	300
2:1	45 pcf	200
1:1	60 pcf	200

EARTHWORK AND GROUND PREPARATION

All earthwork and grading should be performed in accordance with all applicable requirements of the Grading Code of the City of Rialto, California, and the recommendations provided below:

- For any area used for structure, road, hardscape and sidewalks, surface must be over-excavated for a minimum of **5** feet below the existing grade and recompacted for **90%** of laboratory maximum density. The overexcavation must be extended to a minimum of **5** feet beyond the boundaries.

- For proposed road, driveway, and parking subgrade areas, all base material shall be recompacted for **95%** of laboratory maximum density.

- The soil must be moisture conditioned to achieve no more than **2%** higher than optimum moisture content and recompacted prior to placement of base material, concrete, or asphalt. Fill soils shall be placed in 8-inch lifts; moisture conditioned and compacted to the required level of compaction.

- All significant weeds or rootlets should be stripped and removed offsite, prior to grading.

- All cobbles and gravels over **8"** diameter must be removed from the pad or any backfilling area.

- Stockpile soil materials that are to be used as fill should be cleared of any unsuitable materials prior to placement as properly compacted fill.

- Prior to placing fill, all areas to receive fill should first be stripped, watered or air dried as necessary to achieve near optimum moisture conditions, and then recompacted in-place for **90%**.

IMPORTED SOILS

Imported soils should consist of clean materials void of trash, organic and similar deleterious materials, and rock exceeding a maximum dimension of 8 inches.

The imported soil should also exhibit an expansion potential of LOW expansion, as determined in accordance with UBC Standard Test No. 29-2. The onsite soils exhibit a LOW expansion potential.

In order to avoid any possibility of liquefaction, sandy material soils with liquid Limit of <30, or soil with fines (passing # 200 sieve) less than 20% cannot be qualified as fill material. Sieve analysis, Plasticity index and expansion tests are recommended to perform on the import soil material prior to the approval of the soil.

A representative of this firm should approve prospective import soils before transporting to the site. The grading contractor should accommodate sufficient time for performing the above tests, prior to importing soil materials.

FILL PACEMENT AND TESTING

All fills should be placed in 8-inch-thick maximum lifts, watered or air-dried as necessary to achieve near optimum moisture conditions, and then compacted in-place to a minimum relative compaction of 90% for the pads and 95% for the base material for driveway and parking areas.

The laboratory maximum dry density and optimum moisture content for each change in soil type should be determined in accordance with Test Method ASTM D 1557-91.

A representative of this firm should be present onsite during grading operations to verify proper placement and adequate compaction of all fills, as well as to verify compliance with the other geotechnical recommendations presented herein.

EFFECTS OF GRADING ON ADJOINING PROPERTIES

Based on our site observation, the proposed grading and construction will not adversely affect the geologic and geotechnical stability of adjoining properties provided that grading and construction are performed in accordance with the recommendations presented herein.

However, our review of the final grading plan will be necessary to confirm the validity of the above-mentioned issues.

Should there be any anticipation regarding this issue, it will be the responsibility of the grading contractor to contact our firm and the owner before starting the job.

POST-GRADING CONSIDERATIONS
PAD DRAINAGE

Positive drainage devices consisting of sloped concrete flatwork, area drains, and graded earth swales have been designed for the site. The purpose of these devices is to reduce water infiltration into the subgrade, and to direct surface waters away from building foundations, walls and sloped areas. The homeowner is advised that all drainage devices should be properly maintained throughout the lifetime of the development.

UTILITY TRENCH BACKFILL

All utility trench backfill should be compacted to a minimum relative compaction of 90 percent. Trench backfill materials should be placed in lifts no greater than 8 inches in thickness, watered or air dried as necessary to achieve a moisture content that is 2 to 3 points over optimum moisture content, and then mechanically compacted in place to a minimum relative compaction of 90 percent.

Where exterior and/or interior utility trenches are proposed parallel to any building footing, the bottoms of these trenches should not extend below a 1:1 plane projected downward from the bottom edge of the adjacent footing. Where this condition occurs, the adjacent footing should be deepened or the utility constructed and backfilled prior to constructing the footing.

A representative of this firm should be notified 48 hours in advance to verify adequate compaction of the backfill.

SITE CLEARING

All soil, vegetation, and rock debris excavated from stripping and also foundation trenches are to be disposed offsite in a proper manner. This also includes, refuses such as bushes,

organic material, stumps and construction debris. No debris or reject materials from the excavations are to be placed on the slope behind the retaining walls or used as backfill.

FOOTING OBSERVATIONS

All footing trenches should be observed by a representative of this firm to verify that they have been excavated into competent bearing materials. These observations should be performed prior to the placement of forms, reinforcement, or concrete. The excavations should be trimmed neat, level and square. All loose, sloughed or moisture-softened soils and/or construction debris should be removed prior to the placement of concrete. Excavated soils derived from footing and utility trenches should not be placed in slab-on-grade areas unless they are compacted to at least 90 percent of maximum dry density

SOLUBLE SULFATE ANALYSES

Onsite soil materials contain low water-soluble sulfate content. We recommend choosing the criteria for moderate exposure. Per UBC standards, type II cement with 4,000 psi and 0.5 water content ratios is recommended.

MASONRY GARDEN WALLS

Footings for masonry garden walls proposed on level should be embedded at a minimum depth of 12 inches below the lowest adjacent final grade. Where garden walls proposed on or near the tops of descending slopes, the footings should be deepened such that a minimum horizontal clearance of 7 feet is maintained between the outside bottom edges of the footings and the face of the slope.

All footings should also be reinforced with a minimum of four No. 4 bars, two top and two bottom. In order to mitigate the potential for unsightly cracking related to the possible

effects of differential settlement and/or expansion, positive separations (construction joints) should also be provided in the garden walls at each corner and at horizontal intervals of at least 20 feet.

The separation should be provided in the blocks and not extend through the footings. The footings should be poured monolithically with continuous rebars to serve as effective "grade beams" below the walls.

EXTERIOR CONCRETE FLATWORK

Thickness and joint spacing

To reduce the potential of unsightly cracking related to the effects of soils, concrete sidewalks and patio-type slabs should be at least 4 inches thick and provided with saw cuts or expansion joint every 6 feet or less. Concrete driveway slabs should be at least 6 inches thick and provided with saw cuts or expansion joints every 10 feet or less.

REINFORCEMENT

Consideration should be given to reinforcing all concrete patio-type slabs, driveways and sidewalks greater than 5 feet in width with No. 3 bars spaced 18 inches on centers, both ways. The reinforcement should be positioned near the middle of the slabs by means of concrete chairs or brick. All cold joints should be provide with dowels consisting of No. 3 bars, 24 inches in length, and spaced 18 inches on center.

SUBGRADE PREPARATION

As a further measure to mitigate cracking and/or shifting of concrete flatwork, the subgrade soils below concrete flatwork should be thoroughly moistened prior to placing concrete. The moisture content of the soils should be about 130 percent of optimum moisture content and penetrate to a depth of approximately 12 inches below the bottom of the slabs.

EDGE BEAMS

Where the outer edges of concrete flatwork such as patios and driveways are to be bordered by landscaping, consideration should be given to the use of edge beams (thickened edges) to mitigate infiltration of water under the slabs. Edge beams should be 6 to 8 inches wide, extend 12 inches below the tops of the finish slab surfaces, and be reinforced with a minimum of two No. 4 bars, one top and one bottom.

FUTURE IMPROVEMENTS

Should any new structures or improvements be proposed at any time in the future other than those shown on the enclosed site plan and discussed herein, our firm should be notified so that we may provide design recommendations to maintain the integrity of the new improvement.

Potential problems can develop when drainage on the pad is altered in any way (i.e., excavations or placement of fills associated with construction of new walkways, patios, garden walls and planters). Therefore, it is recommended that we be engaged to review the final design drawings, specifications and grading plan prior to any new constructions.

If we are not given the opportunity to review these documents with respect to the geotechnical aspects of new construction and grading, we can take no responsibility for misinterpretation of our recommendations presented herein.

DRIVEWAY & HARDSCAPE RECOMMENDATION

Proposed hardscape, driveway and walkway subgrade areas shall be overexcavated as was mentioned earlier, moisture condition to achieve optimum moisture content and be compacted prior to placement of fill. Fill soils shall be placed in thin lifts; moisture

conditioned and compacted to **95%** of laboratory maximum density. Prior to placement of concrete, presoaking the subgrade to a minimum **130%** is recommended.

CONCRETE AND ASPHALT PAVEMENTS

Due to the potential for the mixing of the soil during the constructions, In order to verify pavement parameters, we recommend performing a confirmatory R- Value test during grading, from the in-place soil on the road area.

GEOTECHNICAL OBSERVATION & TESTING

Several observations, site inspections, meetings, and testing will be required throughout the construction, followings are the typical items:

- Pre-construction meeting.
- Bottom inspection of all overexcavations.
- During the compaction of overexcavated area and the precise grade.
- Footing excavations, prior to the pouring of concrete.
- After presoaking the slabs upgrade and prior to pouring concrete slabs.
- During the construction of area drain and utility trenches.
- During the placement of subgrade for parking and driveways.
- During the placement of the base material for the parking and driveway.
- During the placement of subgrade for the street.
- During the placement of base material for the street.
- When any unusual conditions are encountered during any construction operation subsequent to this report.

All inspections are subject to a minimum of prior 24 hours notice (within working day period). Pre-grade meeting is subject to a minimum of two working days notice.
To avoid any possible delays or misinterpretations, a representative of our firm must be notified to attend the pre-construction meeting with the grading contractor and city inspector to review the grading plans and the soil report and site condition and discuss potential changes prior to proceeding grading. We cannot take any responsibility for changes if we are not given the opportunity to attend the pr-grade meeting and also review the grading plans and foundation plans prior to the construction.

LIMITATIONS

The geotechnical assessment activities presented in this report have been conducted in accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in this area.

No warranty, expressed or implied, is made regarding the conclusions, professional opinions, and recommendations expressed in this report. The conclusions are based solely upon an analysis of the conditions as observed by our personnel and as reported to use by regulatory agencies and other named sources. If actual conditions differ from those described in this report, our office should be notified.

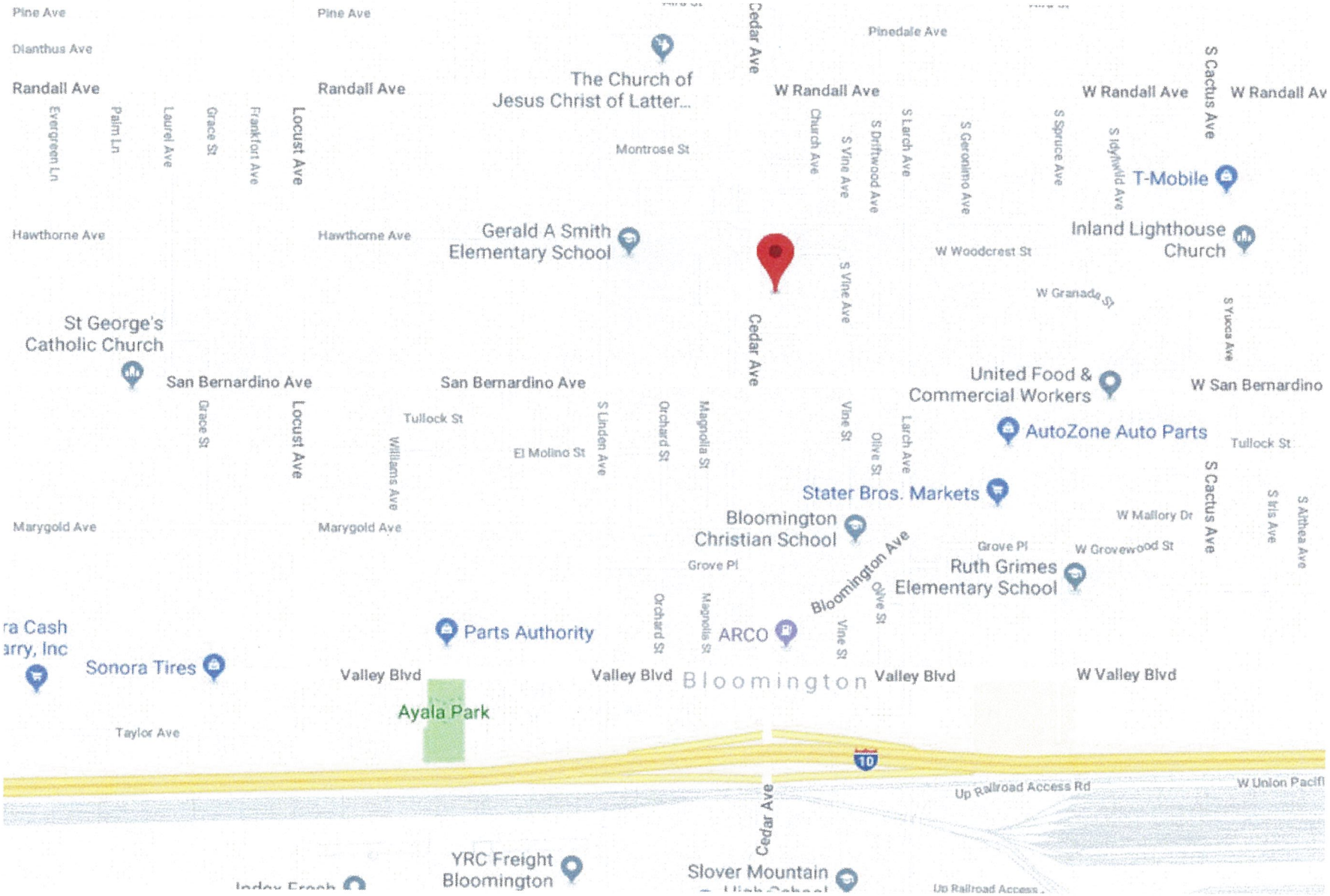
The usage of this report in any independent form cannot be approved unless specific, written verification of the applicability of the recommendations is obtained from our firm.

This investigation has been conducted in accordance With the generally accepted practice in the engineering geology field. No further warranty is offered or implied. The conclusions and recommendations presented are based on surface and subsurface conditions present and our present state of geologic knowledge. They are not meant to imply a control of nature.

The services provided in this report are only to provide geological and geotechnical characteristics of the subsurface, based on our field data and observations only and also the actual public documents that are available by the City of Rialto and following the UBC and ASTM standards. By accepting this report, the client will agree that we are not responsible for the cost of construction or any Real Estate issues for this project. Our firm does not provide Real Estate or cost estimating services, or reviewing any private investigation that may have been performed at the site or surroundings and not released to public agencies. The client is advised to consult a Real Estate expert for any disclosures that relates to geotechnical and geological conditions of the site. We take no responsibility for any matter that is not disclosed to us prior or during our studies.

APPENDIX "A"

FIGURES & MAPS



PROFESSIONAL ENGINEERS CONSULTING, Inc.

SITE VICINITY MAP

Cedar Avenue, Rialto, CA 92376
(APN's: 205-091-25 and 250-091-26)

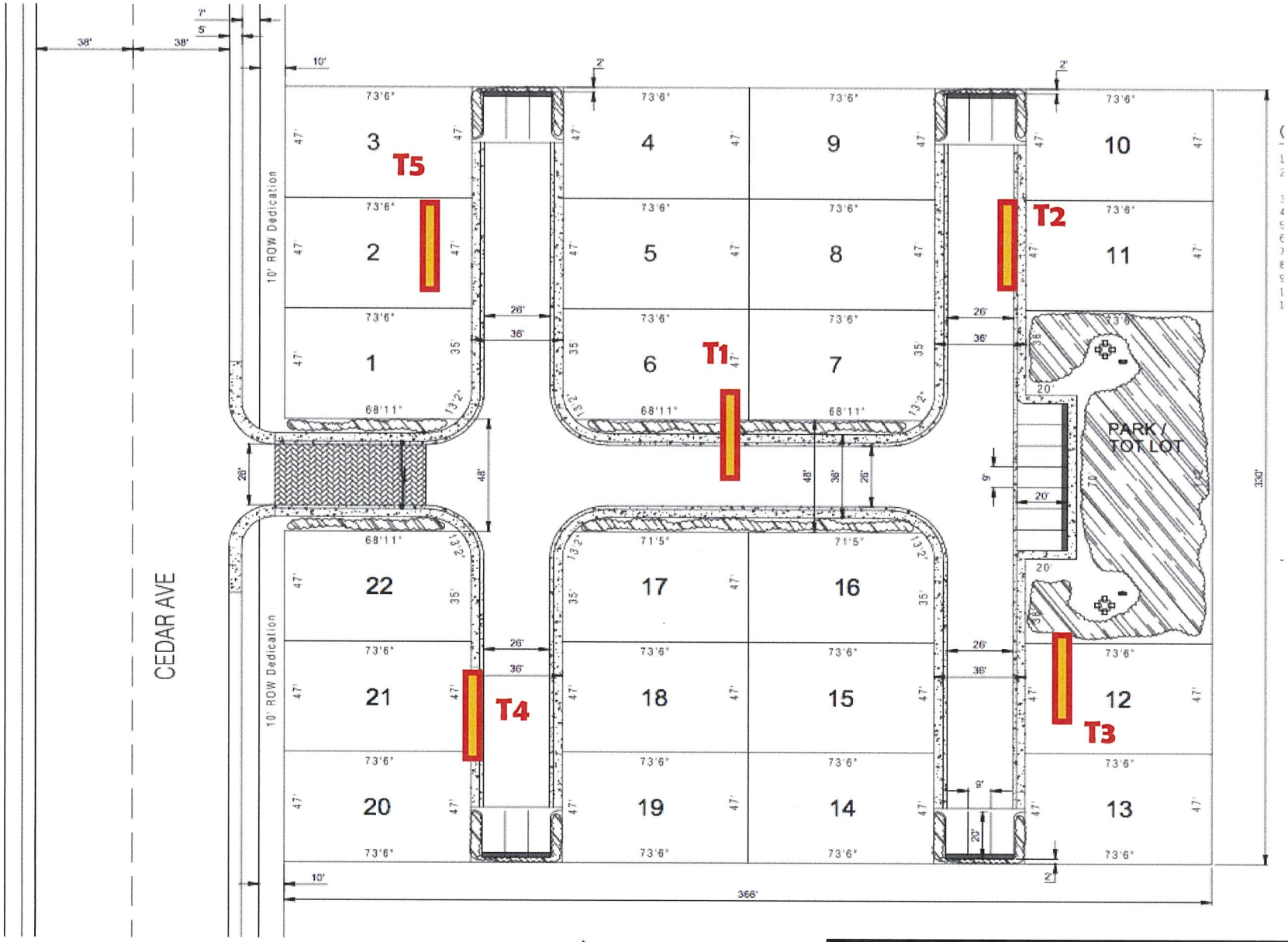
Project No.: SL0719 **Figure: 1**

PROFESSIONAL ENGINEERS CONSULTING, Inc.

SITE AERIAL MAP

Cedar Avenue, Rialto, CA 92376
(APN's: 205-091-25 and 250-091-26)

Project No.: SL0719 **Figure: 2**

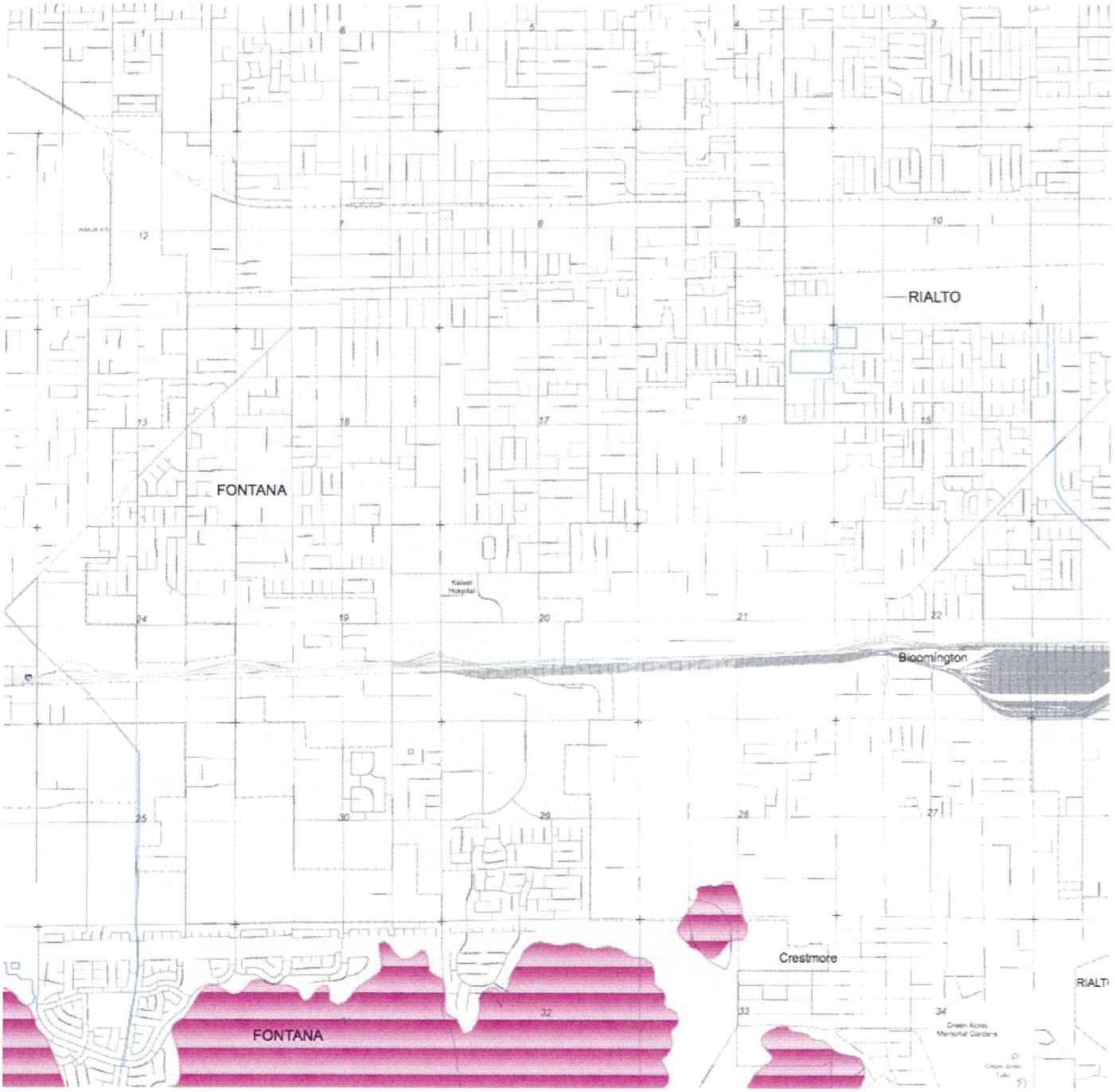


PROFESSIONAL ENGINEERS CONSULTING, Inc.

SITE MAP- SAMPLING LOCATIONS

Cedar Avenue, Rialto, CA 92376
(APN's: 205-091-25 and 250-091-26)

Project No.: SL0719 **Figure: 3**



PROFESSIONAL ENGINEERS CONSULTING, Inc.

SEISMIC HAZARDS MAP

Cedar Avenue, Rialto, CA 92376
(APN's: 205-091-25 and 250-091-26)

Project No.: SL0719 **Figure: 4**

APPENDIX "B"

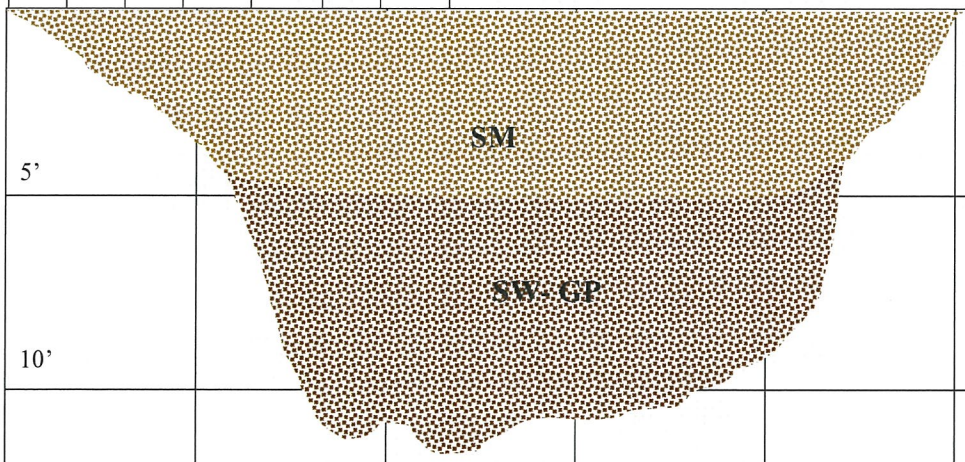
TRENCH LOGS

PROFESSIONAL ENGINEERS CONSULTING, Inc.

TRENCH LOG

Surface Elevation: NA Trench Orientation: N-S Trench Dimensions: 2'X25'X10' Groundwater Depth: NA	Logged By: SS Date: 10-29-04 Equipment: Backhoe This log is a representation of subsurface conditions at the time @ place of excavation.	**T-1**

SAMPLE Bulk	SAMPLE Tube	SAMPLE Blows/Ft.	Field Moisture @ Dry Weight	Dry Density LB/CU.FT.	DEPTH,FEET	SOIL/ROCK TYPE	ENGINEERING CLASSIFICATION AND DESCRIPTION
					5 10 15	SM	Brown SANY SILT, loose, moist to wet, mostly fill material to 3.0 feet below grade. Some rootlets and organic matters within top 6". Brown GRAVELLY SAND WITH SILT, moist, becomes dense from 4.5 feet. Mottled brown, light brown SANDY GRAVEL, dense, moist, cemented. Very dense at 9.0 feet **TOTAL DEPTH = 12.0 FEET**



GEOLOGIC ATTITUDES

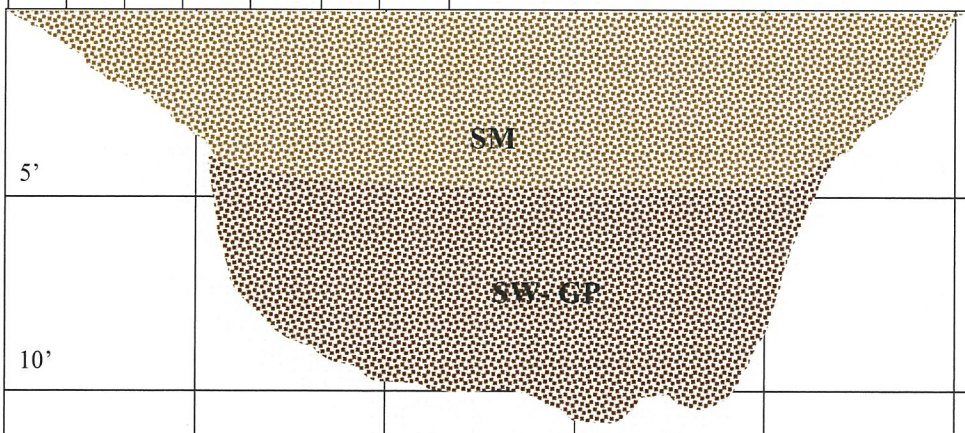
Location @ Situation: APN: 205-091-25 and 250-091-26, Rialto, California	Surface Gradient: NA Scale: ~ 5 ft./Inch	Project No.: SL0719

PROFESSIONAL ENGINEERS CONSULTING, Inc.

TRENCH LOG

Surface Elevation: NA Trench Orientation: N-S Trench Dimensions: 2'X25'X10' Groundwater Depth: NA	Logged By: SS Date: 10-29-04 Equipment: Backhoe This log is a representation of subsurface conditions at the time @ place of excavation.	**T-2**

SAMPLE Bulk	SAMPLE Tube	SAMPLE Blows/Ft.	Field Moisture @ Dry Weight	Dry Density LB/CU.FT.	DEPTH,FEET	SOIL/ROCK TYPE	ENGINEERING CLASSIFICATION AND DESCRIPTION
					5 10 15	SM	Dark brown SAN-SILT mix, soft, wet, mostly fill material to 2.5 feet below grade. Some rootlets and organic matters within top 1.0 foot. Brown GRAVELLY SAND WITH SILT, moist, becomes dense from 5.0 feet. brown SANDY GRAVEL, some cobbles, dense, moist, cemented from 6 feet and below. Very dense at 10.0 feet **TOTAL DEPTH = 11.0 FEET**



5'					**GEOLOGIC ATTITUDES**
10'					
15'					

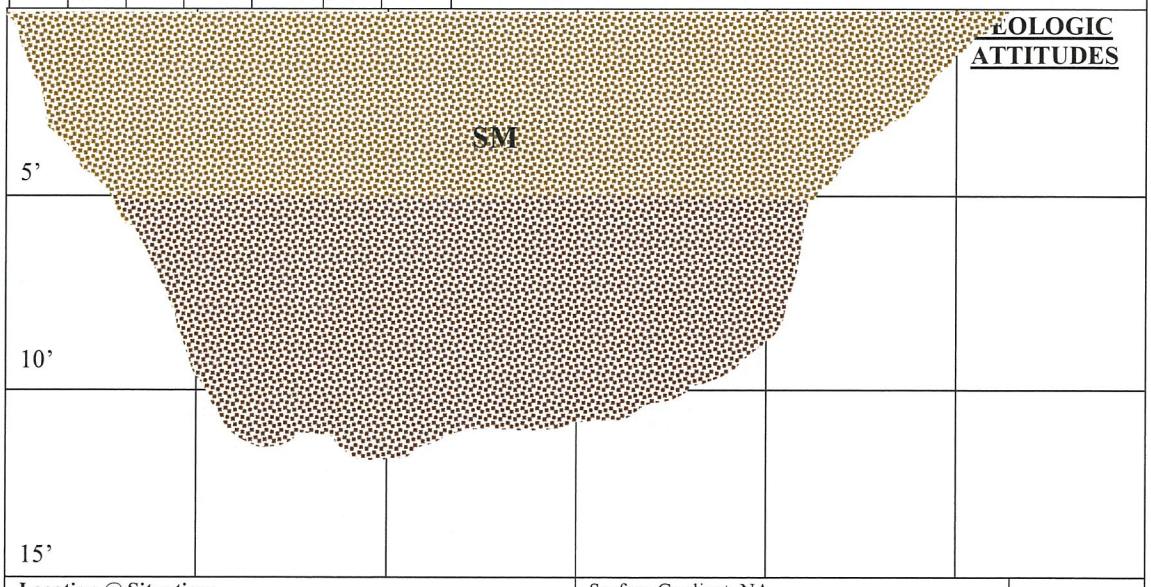
Location @ Situation: APN: 205-091-25 and 250-091-26, Rialto, California	Surface Gradient: NA	
	Scale: ~ 5 ft./Inch	Project No.: SL0719

PROFESSIONAL ENGINEERS CONSULTING, Inc.

TRENCH LOG

Surface Elevation: NA Trench Orientation: N-S Trench Dimensions: 2'X25'X10' Groundwater Depth: NA	Logged By: SS Date: 10-29-04 Equipment: Backhoe This log is a representation of subsurface conditions at the time @ place of excavation.	**T-3**

SAMPLE Bulk	SAMPLE Tube	SAMPLE Blows/Ft.	Field Moisture @ Dry Weight	Dry Density LB/CU.FT.	DEPTH,FEET	SOIL/ROCK TYPE	ENGINEERING CLASSIFICATION AND DESCRIPTION
					5 10 15	SM	Dark brown SAN-SILT mix, loose, moist to wet, some fine gravel. fill material and non compacted native soil from 2.0 to 4.0 feet below grade. Some organic matters within top one foot. Brown SILTYSAND WITH GRAVEL, moist, becomes dense at 5.0 feet. Olive brown, brown GRAVELLY SAND with some SILT, dense, moist, cemented. Very dense at 8.0 feet **TOTAL DEPTH = 12.0 FEET**



GEOLOGIC ATTITUDES

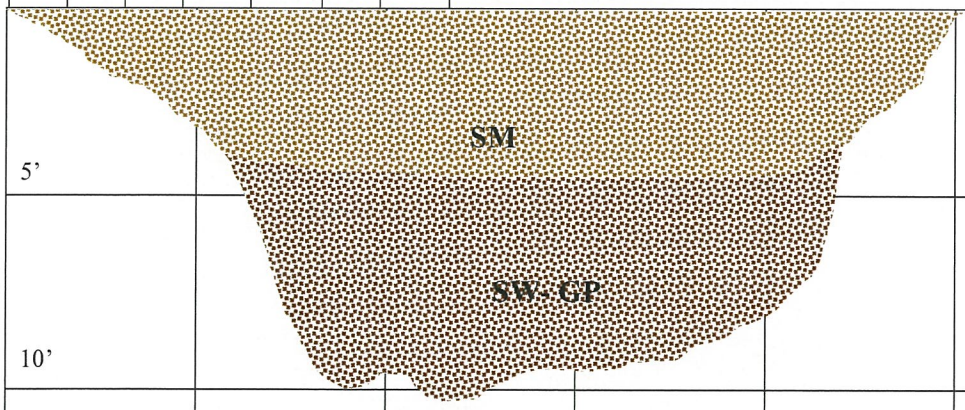
Location @ Situation: APN: 205-091-25 and 250-091-26, Rialto, California	Surface Gradient: NA Scale: ~ 5 ft./Inch	Project No.: SL0719

PROFESSIONAL ENGINEERS CONSULTING, Inc.

TRENCH LOG

Surface Elevation: NA Trench Orientation: N-S Trench Dimensions: 2'X25'X10' Groundwater Depth: NA	Logged By: SS Date: 10-29-04 Equipment: Backhoe This log is a representation of subsurface conditions at the time @ place of excavation.	**T-4**

SAMPLE							
Bulk	Tube	Blows/Ft.	Field Moisture @ Dry Weight	Dry Density LB/CU.FT.	DEPTH,FEET	SOIL/ROCK TYPE	ENGINEERING CLASSIFICATION AND DESCRIPTION
					5 10 15	SM	Olive brown SANY SILT, loose, dry, mostly fill material to 1.5 feet below grade. Organic matters within top18". Brown SAND-SILT mix, moist, dense from 4.0 feet. Olive brown SANDY GRAVEL, dense, moist, cemented. Very dense at 8.0 feet **TOTAL DEPTH = 10.0 FEET**



GEOLOGIC ATTITUDES

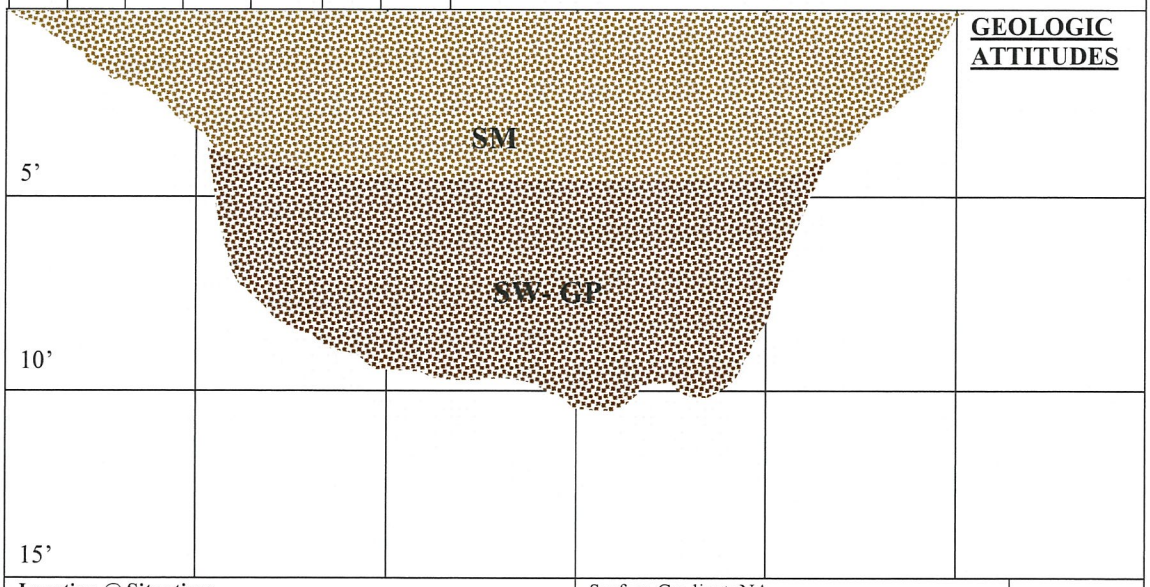
Location @ Situation: APN: 205-091-25 and 250-091-26, Rialto, California	Surface Gradient: NA Scale: ~ 5 ft./Inch	Project No.: SL0719

PROFESSIONAL ENGINEERS CONSULTING, Inc.

TRENCH LOG

Surface Elevation: NA Trench Orientation: N-S Trench Dimensions: 2'X25'X10' Groundwater Depth: NA	Logged By: SS Date: 10-29-04 Equipment: Backhoe This log is a representation of subsurface conditions at the time @ place of excavation.	**T-5**

SAMPLE Bulk	SAMPLE Tube	SAMPLE Blows/Ft.	Field Moisture @ Dry Weight	Dry Density LB/CU.FT.	DEPTH,FEET	SOIL/ROCK TYPE	ENGINEERING CLASSIFICATION AND DESCRIPTION
					5 10 15	SM	Dark Brown SILTY SAND, loose, moist to wet. Some rootlets and organic matters within top 12". Mottled light and dark brown GRAVELLY SAND, moist, becoming dense from 4.0 feet. Mottled brown, light brown SANDY GRAVEL, dense, moist, cemented. Very dense at 9.0 feet **TOTAL DEPTH = 10.0 FEET**



GEOLOGIC ATTITUDES

Location @ Situation: APN: 205-091-25 and 250-091-26, Rialto, California	Surface Gradient: NA Scale: ~ 5 ft./Inch	Project No.: SL0719

APPENDIX "C"

LABORATORY ANNALYSES

PROFESSIONAL ENGINEERS CONSULTING, Inc.

DIRECT SHEAR TEST

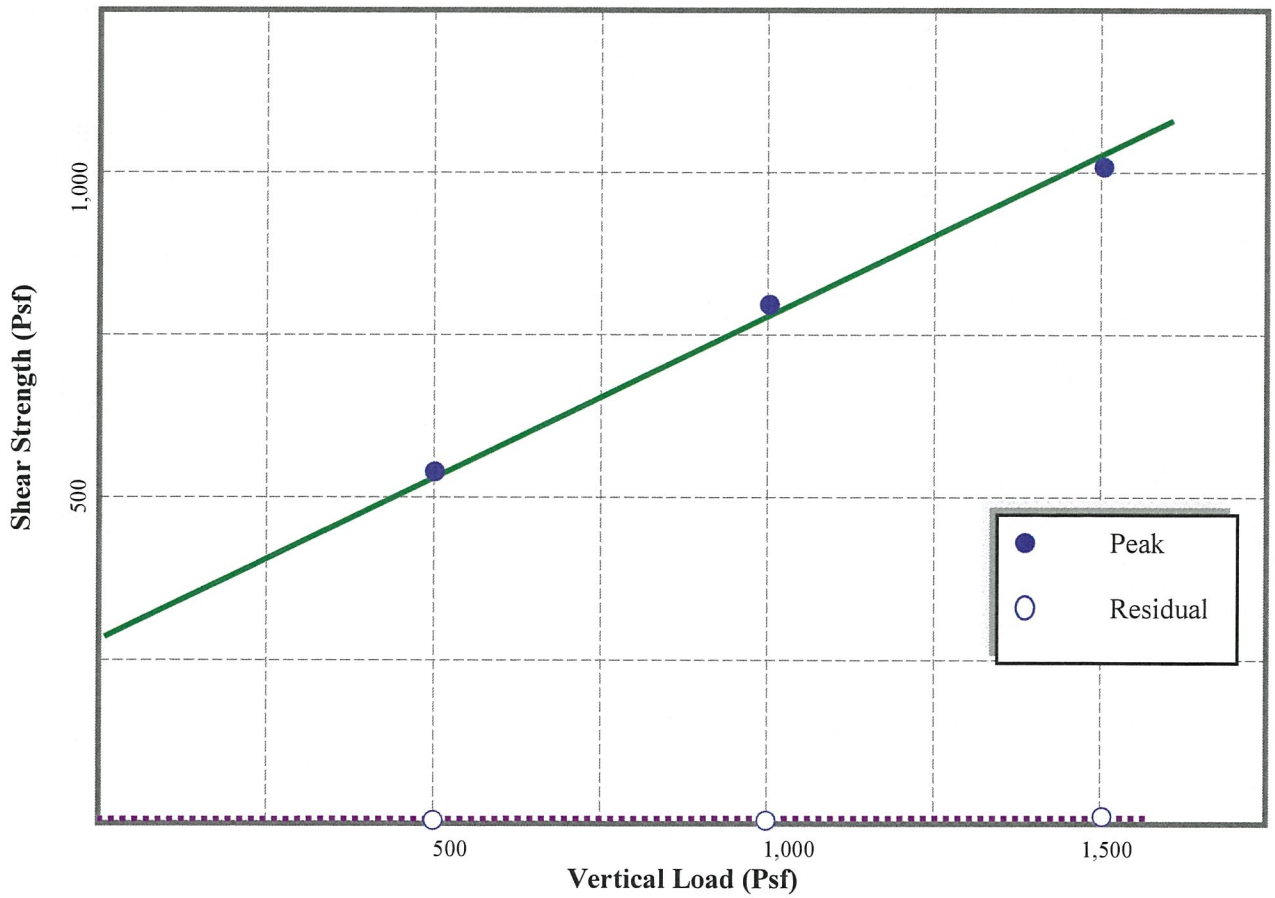
PROJECT NUMBER: SL0719

SITE: APN: 205-091-25 & 250-091-26
Cedar Avenue, Rialto, California

SAMPLE: T-2

DEPTH: 3.5 ft.

Dry density	104.9 pcf	
Water content	13.4%	
Saturated water content	23.4 %	
Shear Characters	Peak	Residual
Cohesion	280	-
Angle of Friction	27	-



PROFESSIONAL ENGINEERS CONSULTING, Inc.

DIRECT SHEAR TEST

PROJECT NUMBER: SL0719

SITE: APN: 205-091-25 & 250-091-26
Cedar Avenue, Rialto, California

SAMPLE: T-1

DEPTH: 5 ft.

Dry density	118.3 pcf	
Water content	5.2 %	
Saturated water content	14.3 %	
Shear Characters	Peak	Residual
Cohesion	70.0	-
Angle of Friction	30.0	-

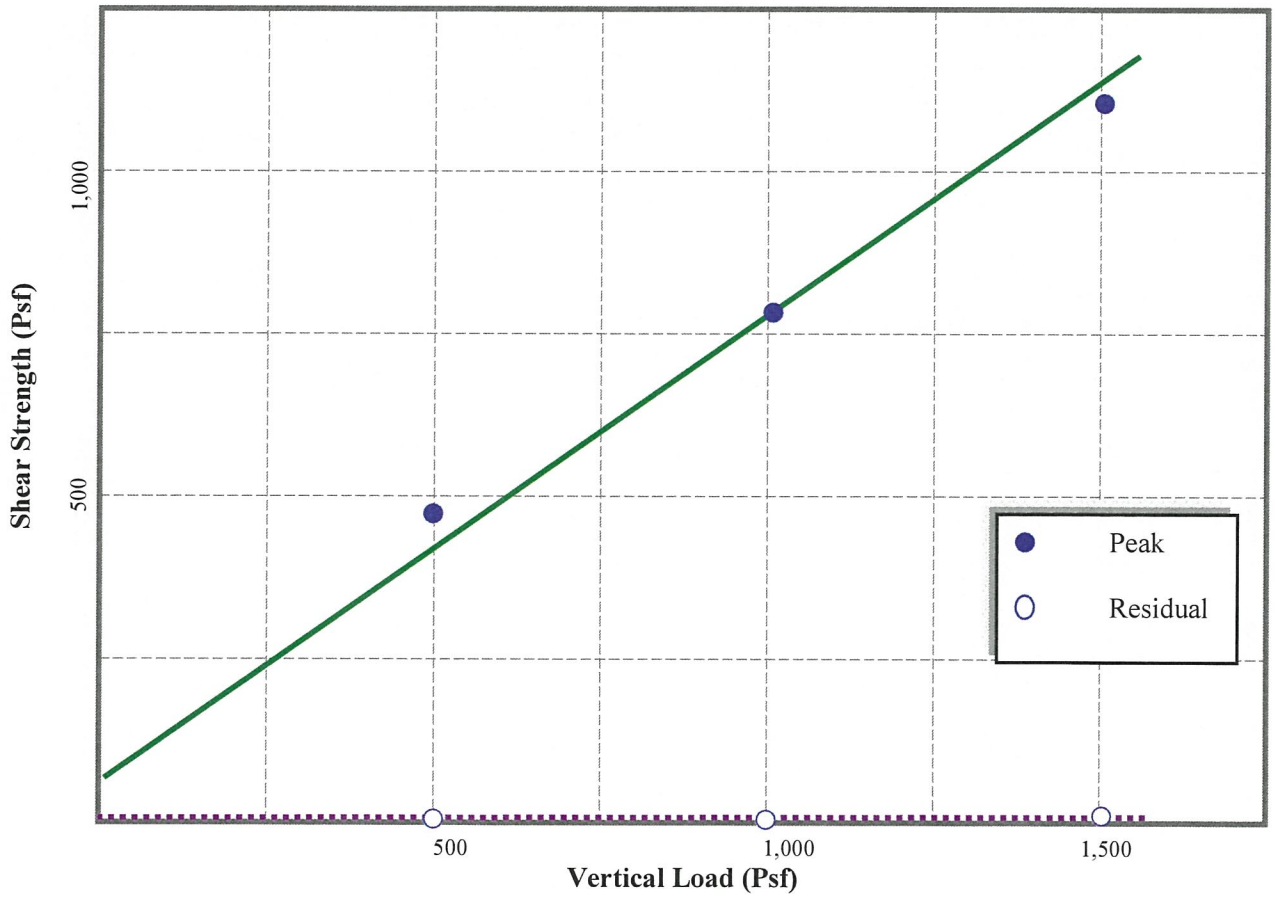


TABLE 1

SUMMARY OF GEOTECHNICAL LABORATORY TESTING

APN: 205-091-25 & 250-091—26
Cedar Avenue, Rialto, California

Expansion Characteristics

Expansion Index	*Potential Expansion*
0-20	Very Low
21-50	Low
51-90	Medium
90-130	High
131+	Very High

Sample Location	Soil Description	Classification/Index
T-1 @ 0-5 ft	Silt Sand mix	19, very low expansion
T-3 @ 0-5 ft	Silt Sand mix	20, very low expansion
T-5 @ 0-5 ft	Silt Sand mix	17, very low expansion

PROFESSIONAL ENGINEERS CONSULTING, Inc.

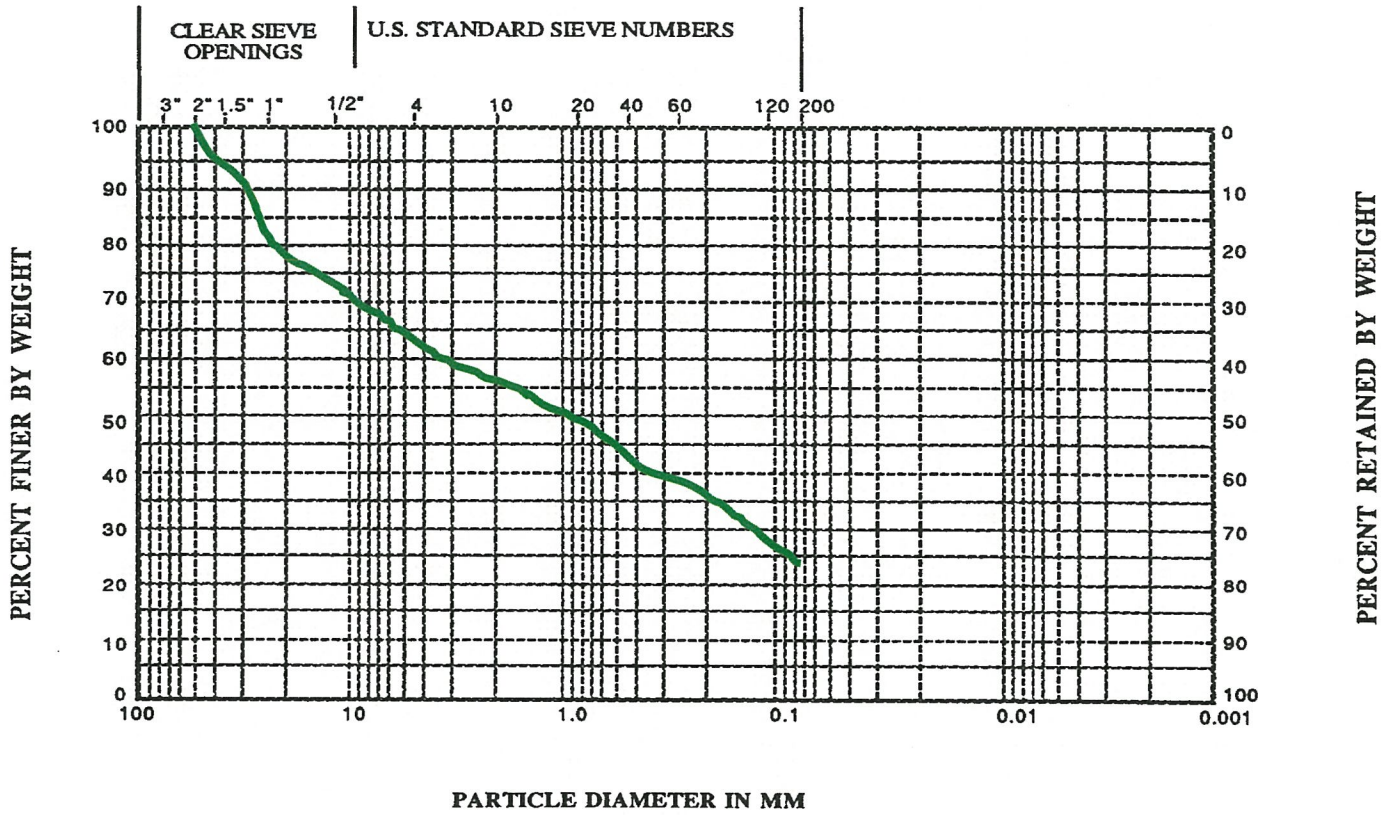
PARTICL SIZE ANALYSIS

PROJECT NUMBER: SL0719

SITE: APN: 205-091-25 and 250-091-26, Rialto, California

SAMPLE: T-1

DEPTH: 1.0- 4.0 ft.



COBBLES	GRAVEL		SAND			SILT AND CLAY FRACTION
	coarse	fine	coarse	medium	fine	

PROFESSIONAL ENGINEERS CONSULTING, Inc.

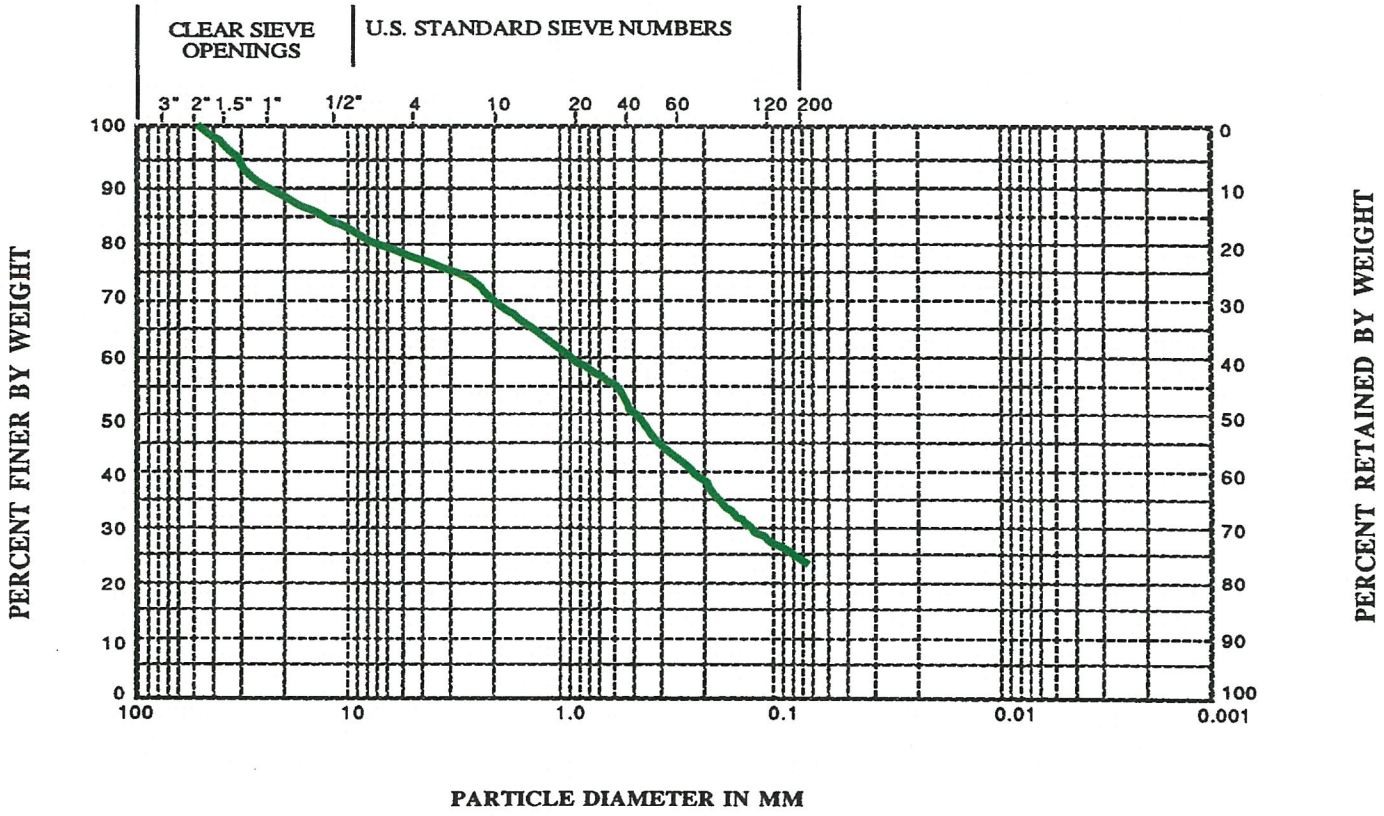
PARTICL SIZE ANALYSIS

PROJECT NUMBER: SL0719

SITE: APN: 205-091-25 and 250-091-26, Rialto, California

SAMPLE: T-2

DEPTH: 5.0- 7.0 ft



COBBLES	GRAVEL		SAND			SILT AND CLAY FRACTION
	coarse	fine	coarse	medium	fine	

APPENDIX E
PRELIMINARY HYDROLOGY AND HYDRAULICS STUDY

Preliminary
Hydrology and Hydraulics Study
for
Residential Development

9561 Cedar Ave

Rialto, CA 92316

APN 205-091-25/26

Tentative Tract Map 20294

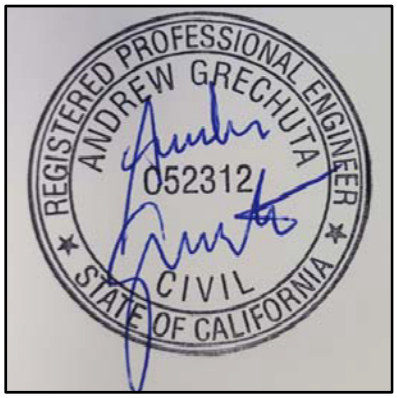
Prepared for:

MV AMCV, LLC.

8626 Hillside Road
Alta Loma, CA 91701

(951) 231-7206

February 03, 2020



Prepared by:

G & G Engineering, Inc.

1251 N. Manassero St., Ste 402
Anaheim, CA 92807

(714) 970-7220

job # 858_Rialto Subdivision

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Project Description:

The project site comprises of 2 assessor's parcels (tract 17254, Lot 25 and 26, APN 205-091-25 & 26). Currently, the site is undeveloped vacant land. The site is located on the east side of Cedar Avenue. The site is approximately 2.85 acres with gently sloped terrain that predominantly slopes from the northeast to southwest with about 6 feet of topographic relief across the site. The site is divided into 2 areas; Subarea 1 (Lot 25) and Subarea 2 (lot 26). Drainage flow is dominated by sheet flowing across the property towards Cedar Ave. Figure 1 shows the site and surrounding features.

The project proposes to be developed residentially with 22 single family residences on the entire project site with associated paved driveway/walkway and landscaped areas.

Purpose and objective:

The purpose and objective of this hydrology study are as follows:

1) to determine the design peak 100-year and 10-yr frequency storm runoff for the project site and its tributary upstream offsite area.

Existing Drainage Pattern:

The watershed for the site is divided into two subareas; namely Subarea 1 and Subarea 2.

Proposed Drainage Pattern:

In the post development stage, the watershed is also divided into 2 subareas. Storm water from Subarea 1 and 2 will be collected into catch basins and diverted into MC-4500 Storm Chambers (47 Units). During storm events exceeding more 85th Percentile rain, storm water will overflow from the catch basins thru underground piping and co-mingled prior to discharging thru parkway culverts on to street gutters.

Methodology:

The hydrology calculations performed utilized the Section D -Rational Method of the San Bernardino County Hydrology Manual (SHCHM), dated August 1986. The 100-Year storm return frequency rainfall was used for existing and developed conditions Rational Hydrology.

The watershed studied (see enclosed Hydrology Map in Figure H-1), consists of proposed project site which is situated within the San Bernardino County's Valley Area of 100-year l-hour isohyet of 1.42" and 10-year l-hour isohyet of 0.894" inches (per NOAA website) and with slope for rainfall intensity curve of 0.60 for valley area (SHCHM).

Drainage area delineation was performed utilizing the one-foot (1-ft) topographic survey data generated from the site survey in the existing condition. For the post-developed condition the Final Grading Plan was used for drainage delineation.

Drainage Master Plan

There are no master plans of drainage facilities on or adjacent to the subject site per the County of San Bernardino Storm Drain Plan (CSDP). Reportedly, City of Rialto does not have any records for this area.

Flood Insurance Rate Maps (FIRM):

The site is located in Zone X of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), San Bernardino County, California and incorporated areas "Not Printed" with map number 06071C8659H dated August 28, 2008. A Zone X is designation as areas determined to be outside of the 0.2% annual chance floodplain. The FIRM map for this project is located in Figure 2.

Watershed Precipitation Data:

Precipitation data (attached in Appendix A) from the Isohyetal maps included in the SBCHM was used in this report and is shown below. Since the project location is in the Valley area, the slope of intensity duration curve value of 0.60 was used per the SBCHM.

Table 1 – Precipitation Data (Rational Method Calculations)

Storm Event	Precipitation (inches)	Ref. Appendix
100-Yr, 1-Hr	1.42	A
25-Yr, 1-Hr	1.1	A
10-Yr, 1-Hr	0.894	A

Hydrology Calculations & Summary:

Time of Concentration (Tc)

The time of concentration (Tc) was obtained by first defining the subareas and their respective length of flow, elevation difference, and percent impervious. This data was then plotted onto Figure D-3 (see Attachment B), Time of Concentration Nomograph, in order to obtain the time of concentration for each drainage subarea per SBCHM. Subarea Initial Time of Concentrations (Tc) has been shown in Table 2 below:

Table 2 – Time of Concentration (Overland Flow)

Subarea/ Lot No.	On-site /Off-site	Development Stage (Pre/Post)	Node 1 Elev. (ft)	Node 2 elev (ft)	Elev. Diff. (ft)	Flow length, L (ft)	Tc (min)	Ref. Appendix	Notes
Subarea 1	On-Site	Pre*	52.2	46.1	6.2	484.0	10.50	B	
		Post	52.2	48.1	4.2	353.0	9.70		
Subarea 2	On-Site	Pre*						B	
		Post	51.5	48.1	3.4	348.0	9.90		
*-Combined DMAs									

Rainfall Intensity, I (in/hr)

The rainfall intensity (I) was calculated for 100-year and 10-year storms by first finding the 100-Yr 1-Hr and 10-Yr 1-Hr precipitation values from NOAA website (Appendix A). This site-specific precipitation values were then plotted onto Plate D-3 (Appendix C) in order to find the rainfall intensities (I), based on the log-log slope of site location (Valley = 0.6).

Subarea Rainfall Intensity (I) has been shown in table 3 below.

Table 3 – Rainfall Intensity

Subarea	Tc (Min)		100 Yr Rainfall Intensity, I_{100} (in/hr)		25 Yr Rainfall Intensity, I_{25} (in/hr)		10 Yr Rainfall Intensity, I_{10} (in/hr)		Ref. Appendix
	Pre*	Post	Pre*	Post	Pre*	Post	Pre*	Post	
Subarea 1	10.5	9.7	4.15	4.32	3.12	3.3	2.5	2.62	B & C
Subarea 2		9.9		4.3		3.25		2.6	
*- Combined Subareas									

Soil Types and SCS Numbers

Soil types on the project site and corresponding SCS Curve Numbers (AMC II) used in this report (see Appendix D) were obtained from the Soils Group map and Figures C-2 & 3 (see Appendix D) included in the SBCHM and are tabulate below.

For the entire project site, type "A" is shown per soil investigation (attached in Appendix C). For the existing condition, "Barren" is selected as the site is graded but undeveloped with single Subarea. For the developed condition, the project is composed of predominantly impervious

(roof, driveway/parking) areas and streets, the site being consists of two Subareas Mixed cover has been calculated based on proportioning area of Landscape and Impervious Area.

Table 4 – On-site Pre-developed SCS Number

Soil Cover	Soil Type	Quality of Cover	Area (SF)			SCS Curve No. (AMC II)		SCS Curve No. (AMC III)
			Pervious	Imp.	Total			Use for 100 - Yr rain
Barren (graded land)	A	Poor	124,434	0	124,434		**78**	**93**
Landscape	A	Good	0	0	0		32	53
Imp. Area	D	-	0	0	0		98	100
Mixed Cover		-	0			86 (0)		
						32 (0)		
						98 (0)		
			Total Area (Ac.) =		2.86			

Table 5 – On-site Post-developed SCS Number

Soil Cover	Soil Type	Quality of Cover	Area (SF)			SCS Curve No. (AMC II)		SCS Curve No. (AMC III)
			Pervious	Imp.	Total			Use for 100 - Yr rain
Grass, Annual or perenial	A	-		0				
Landscape	A	Good	87,649		87,649		78	53
Imp. Area	D	-		36,785	36,785		98	100
Mixed Cover		-				86 (0)	**84**	**96**
			87,649	36,785	124,434	78 (87649)		
						98 (36,785)		
		Total Area (Ac) =			2.86			

Calculation of Infiltration Rate, Fp:

Infiltration rate losses for the pervious area were obtained from SBCHM Figure C-6 (Appendix E) and are shown below.

Table 6 – Pervious Loss Rate, Fp

Subarea: On-site /Off-site	Development Stage (Pre/Post)	SCS Curve No. (AMC II)	SCS Curve No. (AMC III)	Fp (in/hr)- 10/25 Yr	Fp (in/hr)- 100 Yr	Ref. Appendix
Subarea 1	Pre*	78	93	0.42	0.18	D
	Post	84	96	0.31	0.12	D
Subarea 2	Pre*	78	93	0.42	0.18	D
	Post	84	96	0.31	0.12	D
*- Combined Subareas						

Calculation of Maximum Loss Rate, Fm:

The area-average maximum loss rate corresponds to soil group, cover complex and imperviousness of the drainage subarea. Maximum Loss Rates for the site are as follows:

Table 7 – Maximum Loss Rate, Fm

Subarea: On-site	Develop-ment Stage (Pre/Post)	Perviou s Area (SF)	Impervious Area, (SF)	Total (SF)	Perviou s Fraction , Ap (%)	Fp (in/hr) 10-yr	Fp (in/hr) 25-yr	Fp (in/hr) 100-yr	Maximum Loss Rate, Fm = Ap*Fp (in/hr); 10 -Yr	Maximum Loss Rate, Fm = Ap*Fp (in/hr); 25 -Yr	Maximum Loss Rate, Fm = Ap*Fp (in/hr); 100 -Yr
Subarea 1	Pre	62,172	0	62,172	1.00	0.42	0.42	0.18	0.42	0.42	0.18
	Post	43,825	18347	62,172	0.70	0.31	0.31	0.12	0.22	0.22	0.08
Subarea 2	Pre	62,172	0	62,172	1.00	0.42	0.42	0.18	0.42	0.42	0.18
	Post	43,825	18347	62,172	0.70	0.31	0.31	0.12	0.22	0.22	0.08

Calculation of Flow, Q:

The pre and post-development flow computations were performed and are presented below for overland flows. These overland flows were used to calculate pipe size and velocity using Manning's equation in order to find travel time thru pipe and total time of concentration including overland flow and subsequent combine flow as shown below:

Table 8 – Runoff Flow (Overland Flow)

Subarea:	Development Stage (Pre/Post)	Area, A (Ac)	Design Storm Frequency		Rainfall Intensity, I (in/hr)	Maximum Loss Rate, Fm (in/hr)	Flow, Q_{100} = 0.90(I-Fm)A, (cfs)	Flow, Q_{25} = 0.90(I-Fm)A, (cfs)	Flow, Q10 = 0.90(I-Fm)A, (cfs)
			Yr	Hr					
Subarea 1	Pre*	2.86	10	1	2.5	0.42			5.35
			25		3.12	0.42		6.94	
			100		4.15	0.18	10.21		
	Post	1.43	10		2.62	0.22			3.09
			25		3.3	0.22		3.96	
			100		4.32	0.08	5.44		
Subarea 2	Pre*			1					
	Post	1.43	10		2.6	0.22			3.06
			25		3.25	0.22		3.89	
			100		4.3	0.08	5.42		

*- combined Subareas

Concetration Point	Area (Acres)		Devmnt. Type	Velocity (ft/sec)	Tt (min.)	Tc (min.)	I_{10} (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Fm (in/hr)	Fm-Avg. (in/hr)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)	Flow Length (ft)	Slope (ft/ft)	V (ft/s)	Hydraulics and Notes
	Subarea	Total		V														
2 (ele. 47.60')	1.43	1.43	Residen-tial		-	9.70	2.62	3.30	4.32	0.08	0.08	3.26	4.14	5.45	315	0.005		Initial Subarea
				1.726	3.041												0	6" PVC pipe
3 (ele. 46.05')						12.74	2.25	2.8	3.6	0.08	0.08	2.79	3.49	4.52				
4 (ele. 47.40)	1.43	1.43	Residen-tial		-	9.90	2.60	3.25	4.30	0.08	0.08	3.24	4.07	5.42	273	0.005		Initial Subarea
				1.744	3.011												0	6" PVC pipe
5 (elev. 46.05)						12.91	2.5	2.75	3.55	0.08	0.08	3.11	3.43	4.46				

Summary:

Pre-developed Q_{100} = 10.21 cfs Pre-developed Q_{100} = 6.94 cfs
Pre-developed Q_{10} = 5.35 cfs

For Subarea 1
Post-developed Q_{100} = 4.52 cfs Post-developed Q_{100} = 3.49 cfs
Post-developed Q_{10} = 2.79 cfs

For Subarea 2
Post-developed Q_{100} = 4.46 cfs Post-developed Q_{100} = 3.43 cfs
Post-developed Q_{10} = 3.11 cfs

Total Post-developed Q_{100} = 8.98 cfs Total Post-developed Q_{25} = 6.92 cfs
Total Post-developed Q_{10} = 5.90 cfs
Delta Q_{100} = -1.23 cfs Delta Q_{25} = - 0.02 cfs Delta Q_{10} = - 0.55 cfs

Results:

This hydrology study indicates that the maximum Q100-yr, Q25-yr and Q10-yr storm events will produce a runoff off 8.98 cfs, 6.92 cfs and 5.90 cfs respectively. The differences of flows in both cases of storm events between the pre-and post-developed conditions are – ve, meaning indicating reduced flow rates in the post-development stage.

The combined flow rate in the post-development stage for the site is 6.92 cfs for 25-yr storm event which requires 3-6" pipe with 1.5% slope.

Conclusions:
The proposed on-site development creates a decrease in the downstream runoff.

APPENDIX F
WATER QUALITY MANAGEMENT PLAN

Conceptual
Water Quality Management Plan

For:

Residential Development

9561 CEDAR AVE, RIALTO, CA 92316

APNS: 205-091-25/26

TENTATIVE TRACT MAP: 20294

Prepared for:

MV AMCV, LLC.

8626 Hillside Road

Alta Loma, CA 91701

STEVE LANDIS

Prepared by:

G & G Engineering, Inc.

Andrew Grechuta, RCE C52312

1251 Manassero St., Ste 402

Anaheim, CA 92807

(714) 970-7220

Submittal Date: 2/4/20

Revision Date: _____

Approval Date:_____

Project Owner's Certification

This Water Quality Management Plan (WQMP) has been prepared for MV AMCV, LLC.. by G & G Engineering, Inc. The WQMP is intended to comply with the requirements of the City of Rialto and the NPDES Areawide Stormwater Program requiring the preparation of a WQMP. The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with San Bernardino County's Municipal Storm Water Management Program and the intent of the NPDES Permit for San Bernardino County and the incorporated cities of San Bernardino County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors in interest and the city/county shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and funding) of the WQMP have been accepted and that the plan will be transferred to future successors."

.

Project Data			
Permit/Application Number(s):	TBD	Grading Permit Number(s):	TBD
Tract/Parcel Map Number(s):	TM 20294	Building Permit Number(s):	TBD
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):			

Owner's Signature			
Owner Name: MV AMCV, LLC			
Title			
Company	MV AMCV, LLC		
Address	8628 HILLSIDE ROAD, ALTA LOMA, CA 91701		
Email	STEVE@LANDEXCORP.COM		
Telephone #	951-231-7206		
Signature		Date	02-04-2020

Preparer's Certification

Project Data			
Permit/Application Number(s):	TBD	Grading Permit Number(s):	TBD
Tract/Parcel Map Number(s):	20294	Building Permit Number(s):	TBD
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):			

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of Regional Water Quality Control Board Order No. R8-2010-0036."

Engineer: Andrew Grechuta		PE Stamp Below
Title	Project Manager	
Company	G & G Engineering, Inc.	
Address	1251 Manassero St., Ste 402	
Email	andrew@mygng.com	
Telephone #	714-970-7220	
Signature	Andrew Grechuta	
Date	12/13/19	

Table of Contents

Forms

Section 1 Discretionary Permit(s)

Form 1-1 Project Information					
Project Name	Tentative Tract Map				
Project Owner Contact Name:	Steve Landis				
Mailing Address:	8626 Hillside Road, Alta Loma, CA 91701	E-mail Address:	STEVE@LANDEXCORP.COM	Telephone:	951-231-7206
Permit/Application Number(s):	TBD	Tract/Parcel Map Number(s):	20294		
Additional Information/ Comments:					
Description of Project:	The project site is located on the East side of Cedar Ave. The project proposes to construct 22- single family residences and associated interior roads and driveways.				
Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy.	This is the Preliminary WQMP				

Section 2 Project Description

2.1 Project Information

This section of the WQMP should provide the information listed below. The information provided for Conceptual/ Preliminary WQMP should give sufficient detail to identify the major proposed site design and LID BMPs and other anticipated water quality features that impact site planning. Final Project WQMP must specifically identify all BMP incorporated into the final site design and provide other detailed information as described herein.

The purpose of this information is to help determine the applicable development category, pollutants of concern, watershed description, and long term maintenance responsibilities for the project, and any applicable water quality credits. This information will be used in conjunction with the information in Section 3, Site Description, to establish the performance criteria and to select the LID BMP or other BMP for the project or other alternative programs that the project will participate in, which are described in Section 4.

Form 2.1-1 Description of Proposed Project

1 Development Category (Select all that apply):

☐ Significant re-development involving the addition or replacement of 5,000 ft^2 or more of impervious surface on an already developed site	☒ New development involving the creation of 10,000 ft^2 or more of impervious surface collectively over entire site	☐ Automotive repair shops with standard industrial classification (SIC) codes 5013, 5014, 5541, 7532- 7534, 7536-7539	☐ Restaurants (with SIC code 5812) where the land area of development is 5,000 ft^2 or more
☐ Hillside developments of 5,000 ft^2 or more which are located on areas with known erosive soil conditions or where the natural slope is 25 percent or more	☐ Developments of 2,500 ft^2 of impervious surface or more adjacent to (within 200 ft) or discharging directly into environmentally sensitive areas or waterbodies listed on the CWA Section 303(d) list of impaired waters.	☐ Parking lots of 5,000 ft^2 or more exposed to storm water	☐ Retail gasoline outlets that are either 5,000 ft^2 or more, or have a projected average daily traffic of 100 or more vehicles per day

☐ Non-Priority / Non-Category Project *May require source control LID BMPs and other LIP requirements. Please consult with local jurisdiction on specific requirements*.

2 Project Area (ft2):	124,088	**3** Number of Dwelling Units:	N/A	**4** SIC Code:	2521

5 Is Project going to be phased? Yes ☐ No ☒ *If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.*

6 Does Project include roads? Yes ☒ No ☐ *If yes, ensure that applicable requirements for transportation projects are addressed (see Appendix A of TGD for WQMP)*

2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

Form 2.2-1 Property Ownership/Management
Describe property ownership/management responsible for long-term maintenance of WQMP storm water facilities:
The property is owned by MV AMCV, LLC. and future HOA for the project will be responsible for long term maintenance of WQMP and strom water facilities.

2.3 Potential Stormwater Pollutants

Determine and describe expected stormwater pollutants of concern based on land uses and site activities (refer to Table 3-3 in the TGD for WQMP).

Form 2.3-1 Pollutants of Concern

Pollutant	Please check: E=Expected, N=Not Expected		Additional Information and Comments
Pathogens (Bacterial / Virus)	E ☒	N ☐	
Nutrients - Phosphorous	E ☐	N ☒	
Nutrients - Nitrogen	E ☐	N ☒	
Noxious Aquatic Plants	E ☐	N ☐	
Sediment	E ☒	N ☐	
Metals	E ☐	N ☒	
Oil and Grease	E ☒	N ☐	
Trash/Debris	E ☒	N ☐	
Pesticides / Herbicides	E ☒	N ☐	
Organic Compounds	E ☒	N ☐	
Other:	E ☐	N ☐	
Other:	E ☐	N ☐	
Other:	E ☐	N ☐	
Other:	E ☐	N ☐	
Other:	E ☐	N ☐	

2.4 Water Quality Credits

A water quality credit program is applicable for certain types of development projects if it is not feasible to meet the requirements for on-site LID. Proponents for eligible projects, as described below, can apply for water quality credits that would reduce project obligations for selecting and sizing other treatment BMP or participating in other alternative compliance programs. Refer to Section 6.2 in the TGD for WQMP to determine if water quality credits are applicable for the project.

Form 2.4-1 Water Quality Credits			
[1] Project Types that Qualify for Water Quality Credits: *Select all that apply*			
☐ Redevelopment projects that reduce the overall impervious footprint of the project site. [Credit = % impervious reduced]	Higher density development projects ☐ Vertical density [20%] ☐ 7 units/ acre [5%]	☐ Mixed use development, (combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that demonstrate environmental benefits not realized through single use projects) [20%]	☐ Brownfield redevelopment (redevelop real property complicated by presence or potential of hazardous contaminants) [25%]
☐ Redevelopment projects in established historic district, historic preservation area, or similar significant core city center areas [10%]	☐ Transit-oriented developments (mixed use residential or commercial area designed to maximize access to public transportation) [20%]	☐ In-fill projects (conversion of empty lots & other underused spaces < 5 acres, substantially surrounded by urban land uses, into more beneficially used spaces, such as residential or commercial areas) [10%]	☐ Live-Work developments (variety of developments designed to support residential and vocational needs) [20%]
[2] Total Credit % *(Total all credit percentages up to a maximum allowable credit of 50 percent)*			
Description of Water Quality Credit Eligibility (if applicable)	N/A		

Section 3 Site and Watershed Description

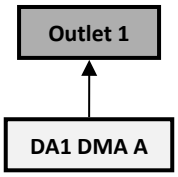
Describe the project site conditions that will facilitate the selection of BMP through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed DMAs) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. The form below is provided as an example. Then complete Forms 3.2 and 3.3 for each DA on the project site. ***If the project has more than one drainage area for stormwater management, then complete additional versions of these forms for each DA / outlet.***

Form 3-1 Site Location and Hydrologic Features

Site coordinates *take GPS measurement at approximate center of site*	Latitude: 34.080017	Longitude: −117.395725	Thomas Bros Map page 605

1 San Bernardino County climatic region: ☒ Valley ☐ Mountain

2 Does the site have more than one drainage area (DA): Yes ☒ No☐ *If no, proceeds to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached*



Example only – modify for project specific WQMP using additional form

Conveyance	Briefly describe on-site drainage features to convey runoff that is not retained within a DMA
DA1 DMA A to Outlet 1	*Drainage overflow from HydroStor chamber discharges on to outlet 1.*

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1				
For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA A	DMA B	DMA C	DMA D
1 DMA drainage area (ft^2)	124,088			
2 Existing site impervious area (ft^2)	0			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*				
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A			
5 Longest flowpath length (ft)	484			
6 Longest flowpath slope (ft/ft)	0.008			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Barren			
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating*	Good			

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1 (use only as needed for additional DMA w/in DA 1)				
For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA E	DMA F	DMA G	DMA H
1 DMA drainage area (ft^2)				
2 Existing site impervious area (ft^2)				
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*				
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*				
5 Longest flowpath length (ft)				
6 Longest flowpath slope (ft/ft)				
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*				
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating*				

Form 3-3 Watershed Description for Drainage Area	
Receiving waters *Refer to Watershed Mapping Tool - http://permitrack.sbcounty.gov/wap/* *See 'Drainage Facilities" link at this website*	Santa Ana River
Applicable TMDLs *Refer to Local Implementation Plan*	None
303(d) listed impairments *Refer to Local Implementation Plan and Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/ and State Water Resources Control Board website – http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/index.shtml*	Nitrate, Pathogens, Copper,
Environmentally Sensitive Areas (ESA) *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	None
Unlined Downstream Water Bodies *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	None
Hydrologic Conditions of Concern	☐ Yes *Complete Hydrologic Conditions of Concern (HCOC) Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-10 in submittal* ☒ No
Watershed–based BMP included in a RWQCB approved WAP	☐ Yes *Attach verification of regional BMP evaluation criteria in WAP* • *More Effective than On-site LID* • *Remaining Capacity for Project DCV* • *Upstream of any Water of the US* • *Operational at Project Completion* • *Long-Term Maintenance Plan* ☒ No

Section 4 Best Management Practices (BMP)

4.1 Source Control BMP

4.1.1 Pollution Prevention

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N1	Education of Property Owners, Tenants and Occupants on Storm water BMPs	☒	☐	Education materials provided for owners and employees on site.
N2	Activity Restrictions	☒	☐	Parking lot is limited to parking only.
N3	Landscape Management BMPs	☒	☐	Landscaping to be continuously maintained as originally designed.
N4	BMP Maintenance	☒	☐	Maintenance is scheduled on a weekly and monthly basis.
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	N/A
N6	Local Water Quality Ordinances	☐	☒	No local water ordinances.
N7	Spill Contingency Plan	☐	☒	The site has no storage or use of controlled substances.
N8	Underground Storage Tank Compliance	☐	☒	There are no underground storage tanks other than stormtech chambers.
N9	Hazardous Materials Disclosure Compliance	☐	☒	The site has no hazardous materials.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N10	Uniform Fire Code Implementation	☒	☐	Fire code is complied with for building purposes.
N11	Litter/Debris Control Program	☒	☐	The site has a scheduled sweeping program for all parking areas.
N12	Employee Training	☒	☐	Employees/residents are trained in all site maintenance issues.
N13	Housekeeping of Loading Docks	☐	☒	There is no loading dock on the site.
N14	Catch Basin Inspection Program	☒	☐	Catch basins needs to be insopected before forecast and seasonally befor ethe beg of rainy season.
N15	Vacuum Sweeping of Private Streets and Parking Lots	☒	☐	Site parking lot will be swept on a regular basis as part of pervious paver maint.
N16	Other Non-structural Measures for Public Agency Projects	☐	☒	None on site.
N17	Comply with all other applicable NPDES permits	☒	☐	All applicable permits to be compiled with.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S1	Provide storm drain system stencilling and signage (CASQA New Development BMP Handbook SD-13)	☒	☐	Stencil to be applied to parkway drain outlet from site.
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)	☐	☒	Site has no outdoor storage areas.
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	☒	☐	Trash enclosure is constructed per guidelines of SD-13
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)	☒	☐	Efficient irrigation system and smart controller will be used.
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	☒	☐	The site's landscape areas will be at a minimum of 1"-2" below top of curb, sidewalk or pavements.
S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)	☐	☒	No slopes or channels
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)	☐	☒	No dock areas
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)	☐	☒	No covered maintenance bays on site.
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	No vehicle washing allowed on site.
S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)	☐	☒	No outdoor processing areas on site.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	There are no wash areas.
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)	☐	☒	There are no fueling areas.
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)	☐	☒	The site has no hillside areas or slopes.
S14	Wash water control for food preparation areas	☐	☒	No food preparation areas.
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)	☐	☒	No car washing on site.

4.1.2 Preventative LID Site Design Practices

Site design practices associated with new LID requirements in the MS4 Permit should be considered in the earliest phases of a project. Preventative site design practices can result in smaller DCV for LID BMP and hydromodification control BMP by reducing runoff generation. Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

Form 4.1-3 Preventative LID Site Design Practices Checklist
Site Design Practices *If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets*
Minimize impervious areas: Yes ☐ No ☒ Explanation:
Maximize natural infiltration capacity: Yes ☒ No ☐ Explanation: HydroStor chambers are proposed to maximum natural infiltration capacity.
Preserve existing drainage patterns and time of concentration: Yes ☒ No ☐ Explanation:
Disconnect impervious areas: Yes ☒ No ☐ Explanation: N/A
Protect existing vegetation and sensitive areas: Yes ☐ No ☐ Explanation: N/A
Re-vegetate disturbed areas: Yes ☐ No ☐ Explanation: N/A
Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Yes ☒ No ☐ Compaction not allowed where HydroStor chambers are proposed. Explanation:
Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: Yes ☐ No ☒ Underground piping is used for overflow from HYdroStor chambers on to street curb and gutter. Explanation:
Stake off areas that will be used for landscaping to minimize compaction during construction : Yes ☐ No ☒ Explanation:

4.2 Project Performance Criteria

The purpose of this section of the Project WQMP is to establish targets for post-development hydrology based on performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), and runoff volume, time of concentration, and peak runoff for protection of any downstream waterbody segments with a HCOC. ***If the project has more than one outlet for stormwater runoff, then complete additional versions of these forms for each DA / outlet.***

Methods applied in the following forms include:

- For LID BMP Design Capture Volume (DCV), the San Bernardino County Stormwater Program requires use of the P_6 method (MS4 Permit Section XI.D.6a.ii) – Form 4.2-1
- For HCOC pre- and post-development hydrologic calculation, the San Bernardino County Stormwater Program requires the use of the Rational Method (San Bernardino County Hydrology Manual Section D). Forms 4.2-2 through Form 4.2-5 calculate hydrologic variables including runoff volume, time of concentration, and peak runoff from the project site pre- and post-development using the Hydrology Manual Rational Method approach. For projects greater than 640 acres (1.0 mi²), the Rational Method and these forms should not be used. For such projects, the Unit Hydrograph Method (San Bernardino County Hydrology Manual Section E) shall be applied for hydrologic calculations for HCOC performance criteria.

Refer to Section 4 in the TGD for WQMP for detailed guidance and instructions.

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 1)		
1 Project area DA 1 (ft^2): DMA A = 124,088	**2** Imperviousness after applying preventative site design practices (Imp%): 0.59	**3** Runoff Coefficient (Rc): 0.40 *R_c = 0.858(Imp%)^3-0.78(Imp%)^2+0.774(Imp%)+0.04*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.571 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.571 *P_6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*		
6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*		24-hrs ☐ 48-hrs ☒
7 Compute design capture volume, DCV (ft^3): 6,925 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*		

Form 4.2-2 Summary of HCOC Assessment (DA 1)

Does project have the potential to cause or contribute to an HCOC in a downstream channel: Yes ☐ No ☒

NO CHANGE IN FLOW REGIME AS A RESULT OF THIS REDEVELOPMENT; V, Tc and Q REMAINS THE SAME

Go to: *http://permitrack.sbcounty.gov/wap/*

If "Yes", then complete HCOC assessment of site hydrology for 2yr storm event using Forms 4.2-3 through 4.2-5 and insert results below

(Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual)

If "No," then proceed to Section 4.3 Project Conformance Analysis

Condition	Runoff Volume (ft^3)	Time of Concentration (min)	Peak Runoff (cfs)
Pre-developed	**1** 9,588 *Form 4.2-3 Item 12*	**2** 15 *Form 4.2-4 Item 13*	**3** 2.29 *Form 4.2-5 Item 10*
Post-developed	**4** 18,106 *Form 4.2-3 Item 13*	**5** 20.63 *Form 4.2-4 Item 14*	**6** 4.01 *Form 4.2-5 Item 14*
Difference	**7** *8,518* *Item 4 – Item 1*	**8** *-5.6* *Item 2 – Item 5*	**9** *1.72* *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** *89%* *Item 7 / Item 1*	**11** *-38%* *Item 8 / Item 2*	**12** *75%* *Item 9 / Item 3*

Form 4.2-3 HCOC Assessment for Runoff Volume (DA 1)

Weighted Curve Number Determination for: Pre-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1a Land Cover type	Barren							
2a Hydrologic Soil Group (HSG)	A							
3a DMA Area, ft^2 *sum of areas of DMA should equal area of DA*	124,088							
4a Curve Number (CN) *use Items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*	78							
Weighted Curve Number Determination for: Post-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1b Land Cover type	Urban Cover - Residential							
2b Hydrologic Soil Group (HSG)	A							
3b DMA Area, ft^2 *sum of areas of DMA should equal area of DA*	124,088							
4b Curve Number (CN) *use Items 5 and 6 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*	(0.6*98+ 0.40*78) =90							

5 Pre-Developed area-weighted CN: 78	**7** Pre-developed soil storage capacity, S (in): 2.82 *S = (1000 / Item 5) - 10*	**9** Initial abstraction, I_a (in): 0.56 *I_a = 0.2 * Item 7*
6 Post-Developed area-weighted CN: 90	**8** Post-developed soil storage capacity, S (in): 1.11 *S = (1000 / Item 6) - 10*	**10** Initial abstraction, I_a (in): 0.22 *I_a = 0.2 * Item 8*

11 Precipitation for 2 yr, 24 hr storm (in): 2.71
Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

12 Pre-developed Volume (ft^3): 9,588
*V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)*

13 Post-developed Volume (ft^3): 18,106
*V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)*

14 Volume Reduction needed to meet HCOC Requirement, (ft^3): 7,613
*V_{HCOC} = (Item 13 * 0.95) – Item 12*

Form 4.2-4 HCOC Assessment for Time of Concentration (DA 1)

Compute time of concentration for pre and post developed conditions for each DA *(For projects using the Hydrology Manual complete the form below)*

Variables	Pre-developed DA1 *Use additional forms if there are more than 4 DMA*				Post-developed DA1 *Use additional forms if there are more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
1 Length of flowpath (ft) *Use Form 3-2 Item 5 for pre-developed condition*	484				330			
2 Change in elevation (ft)	4.0				3.6			
3 Slope (ft/ft), *S_o = Item 2 / Item 1*	0.008				0.011			
4 Land cover	Barren				Urban Cover-Residential			
5 Initial DMA Time of Concentration (min) *Appendix C-1 of the TGD for WQMP*	15				9.60			
6 Length of conveyance from DMA outlet to project site outlet (ft) *May be zero if DMA outlet is at project site outlet*					360			
7 Cross-sectional area of channel (ft^2)					1			
8 Wetted perimeter of channel (ft)					3.14			
9 Manning's roughness of channel (n)					0.10			
10 Channel flow velocity (ft/sec) *V_{fps} = (1.49 / Item 9) * (Item 7/Item 8)^0.67 * (Item 3)^0.5*					0.54			
11 Travel time to outlet (min) *T_t = Item 6 / (Item 10 * 60)*					20.63			
12 Total time of concentration (min) *T_c = Item 5 + Item 11*	15				20.63			

13 Pre-developed time of concentration (min): 15 *Minimum of Item 12 pre-developed DMA*

14 Post-developed time of concentration (min): 20.63 *Minimum of Item 12 post-developed DMA*

15 Additional time of concentration needed to meet HCOC requirement (min): - 5.6 *$T_{C\text{-}HCOC}$ = (Item 13 * 0.95) – Item 14*

Form 4.2-5 HCOC Assessment for Peak Runoff (DA 1)

Compute peak runoff for pre- and post-developed conditions

Variables		Pre-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)*			Post-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)*		
		DMA A	DMA B	DMA C	DMA A	DMA B	DMA C
1 Rainfall Intensity for storm duration equal to time of concentration *I_{peak} = 10^(LOG Form 4.2-1 Item 4 - 0.6 LOG Form 4.2-4 Item 5 /60)*		1.31			1.71		
2 Drainage Area of each DMA (Acres) *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*		2.85			2.85		
3 Ratio of pervious area to total area *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*		1			0.41		
4 Pervious area infiltration rate (in/hr) *Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP*		0.42			0.37		
5 Maximum loss rate (in/hr) *F_m = Item 3 * Item 4* *Use area-weighted F_m from DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*		0.42			0.15		
6 Peak Flow from DMA (cfs) *Q_p =Item 2 * 0.9 * (Item 1 - Item 5)*		2.29			4.01		
7 Time of concentration adjustment factor for other DMA to site discharge point *Form 4.2-4 Item 12 DMA / Other DMA upstream of site discharge point (If ratio is greater than 1.0, then use maximum value of 1.0)*	DMA A	*n/a*			*n/a*		
	DMA B		*n/a*			*n/a*	
	DMA C			*n/a*			*n/a*

8 Pre-developed Q_p at T_c for DMA A: 2.96 *Q_p = Item 6_{DMAA} + [Item 6_{DMAB} * (Item 1_{DMAA} - Item 5_{DMAB})/(Item 1_{DMAB} - Item 5_{DMAB})* Item $7_{DMAA/2}$] + [Item 6_{DMAC} * (Item 1_{DMAA} - Item 5_{DMAC})/(Item 1_{DMAC} - Item 5_{DMAC})* Item $7_{DMAA/3}$]*	**9** Pre-developed Q_p at T_c for DMA B: *Q_p = Item 6_{DMAB} + [Item 6_{DMAA} * (Item 1_{DMAB} - Item 5_{DMAA})/(Item 1_{DMAA} - Item 5_{DMAA})* Item $7_{DMAB/1}$] + [Item 6_{DMAC} * (Item 1_{DMAB} - Item 5_{DMAC})/(Item 1_{DMAC} - Item 5_{DMAC})* Item $7_{DMAB/3}$]*	**10** Pre-developed Q_p at T_c for DMA C: *Q_p = Item 6_{DMAC} + [Item 6_{DMAA} * (Item 1_{DMAC} - Item 5_{DMAA})/(Item 1_{DMAA} - Item 5_{DMAA})* Item $7_{DMAC/1}$] + [Item 6_{DMAB} * (Item 1_{DMAC} - Item 5_{DMAB})/(Item 1_{DMAB} - Item 5_{DMAB})* Item $7_{DMAC/2}$]*

10 Peak runoff from pre-developed condition confluence analysis (cfs): 2.96 *Maximum of Item 8, 9, and 10 (including additional forms as needed)*

11 Post-developed Q_p at T_c for DMA A: 4.01 *Same as Item 8 for post-developed values*	**12** Post-developed Q_p at T_c for DMA B: *Same as Item 9 for post-developed values*	**13** Post-developed Q_p at T_c for DMA C: *Same as Item 10 for post-developed values*

14 Peak runoff from post-developed condition confluence analysis (cfs): 4.01 *Maximum of Item 11, 12, and 13 (including additional forms as needed)*

15 Peak runoff reduction needed to meet HCOC Requirement (cfs): 1.52 *$Q_{p\text{-}HCOC}$ = (Item 14 * 0.95) – Item 10*

4.3 Project Conformance Analysis

Complete the following forms for each project site DA to document that the proposed LID BMPs conform to the project DCV developed to meet performance criteria specified in the MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the MS4 Permit (see Section 5.3.1 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

- Site Design and Hydrologic Source Controls (Form 4.3-2)
- Retention and Infiltration (Form 4.3-3)
- Harvested and Use (Form 4.3-4) or
- Biotreatment (Form 4.3-5).

At the end of each form, additional fields facilitate the determination of the extent of mitigation provided by the specific BMP category, allowing for use of the next category of BMP in the hierarchy, if necessary.

The first step in the analysis, using Section 5.3.2.1 of the TGD for WQMP, is to complete Forms 4.3-1 and 4.3-3) to determine if retention and infiltration BMPs are infeasible for the project. For each feasibility criterion in Form 4.3-1, if the answer is "Yes," provide all study findings that includes relevant calculations, maps, data sources, etc. used to make the determination of infeasibility.

Next, complete Forms 4.3-2 and 4.3-4 to determine the feasibility of applicable HSC and harvest and use BMPs, and, if their implementation is feasible, the extent of mitigation of the DCV.

If no site constraints exist that would limit the type of BMP to be implemented in a DA, evaluate the use of combinations of LID BMPs, including all applicable HSC BMPs to maximize on-site retention of the DCV. If no combination of BMP can mitigate the entire DCV, implement the single BMP type, or combination of BMP types, that maximizes on-site retention of the DCV within the minimum effective area.

If the combination of LID HSC, retention and infiltration, and harvest and use BMPs are unable to mitigate the entire DCV, then biotreatment BMPs may be implemented by the project proponent. If biotreatment BMPs are used, then they must be sized to provide sufficient capacity for effective treatment of the remainder of the volume-based performance criteria that cannot be achieved with LID BMPs (TGD for WQMP Section 5.4.4.2). **Under no circumstances shall any portion of the DCV be released from the site without effective mitigation and/or treatment**.

Form 4.3-1 Infiltration BMP Feasibility (DA 1)

Feasibility Criterion – Complete evaluation for each DA on the Project Site

[1] Would infiltration BMP pose significant risk for groundwater related concerns? Yes ☐ No ☒
Refer to Section 5.3.2.1 of the TGD for WQMP

If Yes, Provide basis: (attach)

[2] Would installation of infiltration BMP significantly increase the risk of geotechnical hazards? Yes ☐ No ☒
(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):

- The location is less than 50 feet away from slopes steeper than 15 percent
- The location is less than eight feet from building foundations or an alternative setback.
- A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.

If Yes, Provide basis: (attach)

[3] Would infiltration of runoff on a Project site violate downstream water rights? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[4] Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[5] Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[6] Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses? Yes ☐ No ☒
See Section 3.5 of the TGD for WQMP and WAP

If Yes, Provide basis: (attach)

[7] Any answer from Item 1 through Item 3 is "Yes": Yes ☐ No ☒
If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Harvest and Use BMP. If no, then proceed to Item 8 below.

[8] Any answer from Item 4 through Item 6 is "Yes": Yes ☐ No ☒
If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Hydrologic Source Control BMP.
If no, then proceed to Item 9, below.

[9] All answers to Item 1 through Item 6 are "No":
Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.
Proceed to Form 4.3-2, Hydrologic Source Control BMP.

4.3.1 Site Design Hydrologic Source Control BMP *N/A*

Section XI.E. of the Permit emphasizes the use of LID preventative measures; and the use of LID HSC BMPs reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable HSC shall be provided except where they are mutually exclusive with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of HSC, if a project cannot feasibly meet BMP sizing requirements or cannot fully address HCOCs, feasibility of all applicable HSC must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design HSC BMP. Refer to Section 5.4.1 in the TGD for more detailed guidance.

Form 4.3-2 Site Design Hydrologic Source Control BMPs (DA 1)

1 Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP: Yes ☒ No ☐ *If yes, complete Items 2-5; If no, proceed to Item 6*	DA 1 DMA A BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Total impervious area draining to pervious area (ft^2)	19,800		
3 Ratio of pervious area receiving runoff to impervious area	1		
4 Retention volume achieved from impervious area dispersion (ft^3) *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff*	825		
5 Sum of retention volume achieved from impervious area dispersion (ft^3): 825 *$V_{retention}$ =Sum of Item 4 for all BMPs*			
6 Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens): Yes ☒ No ☐ *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14*	DA 1 DMA A BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
7 Ponding surface area (ft^2)	22*7.5'*7.5'=1,100		
8 Ponding depth (ft)	0.5		
9 Surface area of amended soil/gravel (ft^2)	0		
10 Average depth of amended soil/gravel (ft)	0		
11 Average porosity of amended soil/gravel	0		
12 Retention volume achieved from on-lot infiltration (ft^3) *$V_{retention}$ = (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)*	550		
13 Runoff volume retention from on-lot infiltration (ft^3): 550 *$V_{retention}$ =Sum of Item 12 for all BMPs*			

Form 4.3-2 cont. Site Design Hydrologic Source Control BMPs (DA 1)

14 Implementation of evapotranspiration BMP (green, brown, or blue roofs): Yes ☐ No ☒ *If yes, complete Items 15-20. If no, proceed to Item 21*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
15 Rooftop area planned for ET BMP (ft^2)			
16 Average wet season ET demand (in/day) *Use local values, typical ~ 0.1*			
17 Daily ET demand (ft^3/day) *Item 15 * (Item 16 / 12)*			
18 Drawdown time (hrs) *Copy Item 6 in Form 4.2-1*			
19 Retention Volume (ft^3) *$V_{retention}$ = Item 17 * (Item 18 / 24)*			
20 Runoff volume retention from evapotranspiration BMPs (ft^3): *$V_{retention}$ =Sum of Item 19 for all BMPs*			
21 Implementation of Street Trees: Yes ☐ No ☒ *If yes, complete Items 22-25. If no, proceed to Item 26*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
22 Number of Street Trees			
23 Average canopy cover over impervious area (ft^2)			
24 Runoff volume retention from street trees (ft^3) *$V_{retention}$ = Item 22 * Item 23 * (0.05/12) assume runoff retention of 0.05 inches*			
25 Runoff volume retention from street tree BMPs (ft^3): *$V_{retention}$ = Sum of Item 24 for all BMPs*			
26 Implementation of residential rain barrel/cisterns: Yes☐ No ☒ *If yes, complete Items 27-29; If no, proceed to Item 30*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
27 Number of rain barrels/cisterns			
28 Runoff volume retention from rain barrels/cisterns (ft^3) *$V_{retention}$ = Item 27 * 3*			
29 Runoff volume retention from residential rain barrels/Cisterns (ft3): *$V_{retention}$ =Sum of Item 28 for all BMPs*			
30 Total Retention Volume from Site Design Hydrologic Source Control BMPs: 1,375 *Sum of Items 5, 13, 20, 25 and 29*			

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4.3.2 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix D of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5.1 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

Form 4.3-3 Infiltration LID BMP - including underground BMPs (DA 1)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 6,925-1,375 = 5,550 *V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item 30*

BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs*	DA 1 DMA A BMP Type Underground Infiltration HydroStor HS180	DA DMA BMP Type *(Use additional forms for more BMPs)*	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix D of the TGD for WQMP for minimum requirements for assessment methods*	2.25		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.13		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*			
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*			
8 Infiltrating surface area, SA_{BMP} (ft^2) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP*			
9 Amended soil depth, d_{media} (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*			
10 Amended soil porosity			
11 Gravel depth, d_{media} (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*			
12 Gravel porosity			
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*			
14 Above Ground Retention Volume (ft^3) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*			
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	35*180+6*15.3 = 6,392		

16 Total Retention Volume from LID Infiltration BMPs: 6,153 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *Retention% = Item 16 / Form 4.2-1 Item 7*

18 Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☒ No ☐

If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP)

for the applicable category of development and repeat all above calculations.

4.3.3 Harvest and Use BMP *N/A*

Harvest and use BMP may be considered if the full LID DCV cannot be met by maximizing infiltration BMPs. Use Form 4.3-4 to compute on-site retention of runoff from proposed harvest and use BMPs.

Volume retention estimates for harvest and use BMPs are sensitive to the on-site demand for captured stormwater. Since irrigation water demand is low in the wet season, when most rainfall events occur in San Bernardino County, the volume of water that can be used within a specified drawdown period is relatively low. The bottom portion of Form 4.3-4 facilitates the necessary computations to show infeasibility if a minimum incremental benefit of 40 percent of the LID DCV would not be achievable with MEP implementation of on-site harvest and use of stormwater (Section 5.5.4 of the TGD for WQMP).

Form 4.3-4 Harvest and Use BMPs (DA 1) N/A

1 Remaining LID DCV not met by site design HSC or infiltration BMP (ft^3):
V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16

BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP) - Use additional forms for more BMPs*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Describe cistern or runoff detention facility			
3 Storage volume for proposed detention type (ft^3) *Volume of cistern*			
4 Landscaped area planned for use of harvested stormwater (ft^2)			
5 Average wet season daily irrigation demand (in/day) Use local values, typical ~ 0.1 in/day			
6 Daily water demand (ft^3/day) *Item 4 * (Item 5 / 12)*			
7 Drawdown time (hrs) *Copy Item 6 from Form 4.2-1*			
8 Retention Volume (ft^3) *$V_{retention}$ = Minimum of (Item 3) or (Item 6 * (Item 7 / 24))*			

9 Total Retention Volume (ft^3) from Harvest and Use BMP *Sum of Item 8 for all harvest and use BMP included in plan*

10 Is the full DCV retained with a combination of LID HSC, retention and infiltration, and harvest & use BMPs? Yes ☐ No ☐

If yes, demonstrate conformance using Form 4.3-10. If no, then re-evaluate combinations of all LID BMP and optimize their implementation such that the maximum portion of the DCV is retained on-site (using a single BMP type or combination of BMP types). If the full DCV cannot be mitigated after this optimization process, proceed to Section 4.3.4.

4.3.4 Biotreatment BMP *N/A*

Biotreatment BMPs may be considered if the full LID DCV cannot be met by maximizing retention and infiltration, and harvest and use BMPs. A key consideration when using biotreatment BMP is the effectiveness of the proposed BMP in addressing the pollutants of concern for the project (see Table 5-5 of the TGD for WQMP).

Use Form 4.3-5 to summarize the potential for volume based and/or flow based biotreatment options to biotreat the remaining unmet LID DCV w. Biotreatment computations are included as follows:

- Use Form 4.3-6 to compute biotreatment in small volume based biotreatment BMP (e.g. bioretention w/underdrains);
- Use Form 4.3-7 to compute biotreatment in large volume based biotreatment BMP (e.g. constructed wetlands);
- Use Form 4.3-8 to compute sizing criteria for flow-based biotreatment BMP (e.g. bioswales)

Form 4.3-5 Selection and Evaluation of Biotreatment BMP (DA 1) N/A

1 Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment (ft^3): *Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16- Form 4.3-4 Item 9*	List pollutants of concern *Copy from Form 2.3-1.*	
2 Biotreatment BMP Selected *(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)*	Volume-based biotreatment *Use Forms 4.3-6 and 4.3-7 to compute treated volume*	Flow-based biotreatment *Use Form 4.3-8 to compute treated volume*
	☐ Bioretention with underdrain ☐ Planter box with underdrain ☐ Constructed wetlands ☐ Wet extended detention ☐ Dry extended detention	☐ Vegetated swale ☐ Vegetated filter strip ☐ Proprietary biotreatment
3 Volume biotreated in volume based biotreatment BMP (ft^3): *Form 4.3-6 Item 15 + Form 4.3-7 Item 13*	**4** Compute remaining LID DCV with implementation of volume based biotreatment BMP (ft^3): *Item 1 – Item 3*	**5** Remaining fraction of LID DCV for sizing flow based biotreatment BMP: % *Item 4 / Item 1*
6 Flow-based biotreatment BMP capacity provided (cfs): *Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)*		
7 Metrics for MEP determination: • Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development: ☐ *If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.*		

Form 4.3-6 Volume Based Biotreatment (DA 1) – Bioretention and Planter Boxes with Underdrains N/A			
Biotreatment BMP Type *(Bioretention w/underdrain, planter box w/underdrain, other comparable BMP)*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
1 Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*			
2 Amended soil infiltration rate *Typical ~ 5.0*			
3 Amended soil infiltration safety factor *Typical ~ 2.0*			
4 Amended soil design percolation rate (in/hr) P_{design} *= Item 2 / Item 3*			
5 Ponded water drawdown time (hr) *Copy Item 6 from Form 4.2-1*			
6 Maximum ponding depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Ponding Depth (ft) d_{BMP} *= Minimum of (1/12 * Item 4 * Item 5) or Item 6*			
8 Amended soil surface area (ft^2)			
9 Amended soil depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Amended soil porosity, *n*			
11 Gravel depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
12 Gravel porosity, *n*			
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*			
14 Biotreated Volume (ft^3) $V_{biotreated}$ *= Item 8 * [(Item 7/2) + (Item 9 * Item 10) +(Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*			
15 Total biotreated volume from bioretention and/or planter box with underdrains BMP: *Sum of Item 14 for all volume-based BMPs included in this form*			

Form 4.3-7 Volume Based Biotreatment (DA 1) – Constructed Wetlands and Extended Detention N/A

Biotreatment BMP Type *Constructed wetlands, extended wet detention, extended dry detention, or other comparable proprietary BMP. If BMP includes multiple modules (e.g. forebay and main basin), provide separate estimates for storage and pollutants treated in each module.*	DA DMA BMP Type		DA DMA BMP Type *(Use additional forms for more BMPs)*	
	Forebay	Basin	Forebay	Basin
1 Pollutants addressed with BMP forebay and basin *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*				
2 Bottom width (ft)				
3 Bottom length (ft)				
4 Bottom area (ft^2) A_{bottom} *= Item 2 * Item 3*				
5 Side slope (ft/ft)				
6 Depth of storage (ft)				
7 Water surface area (ft^2) $A_{surface}$ *=(Item 2 + (2 * Item 5 * Item 6)) * (Item 3 + (2 * Item 5 * Item 6))*				
8 Storage volume (ft^3) *For BMP with a forebay, ensure fraction of total storage is within ranges specified in BMP specific fact sheets, see Table 5-6 of the TGD for WQMP for reference to BMP design details* V *=Item 6 / 3 * [Item 4 + Item 7 + (Item 4 * Item 7)^0.5]*				
9 Drawdown Time (hrs) *Copy Item 6 from Form 2.1*				
10 Outflow rate (cfs) Q_{BMP} *= (Item* $8_{forebay}$ *+ Item* 8_{basin}*) / (Item 9 * 3600)*				
11 Duration of design storm event (hrs)				
12 Biotreated Volume (ft^3) $V_{biotreated}$ *= (Item* $8_{forebay}$ *+ Item* 8_{basin}*) +(Item 10 * Item 11 * 3600)*				
13 Total biotreated volume from constructed wetlands, extended dry detention, or extended wet detention : *(Sum of Item 12 for all BMP included in plan)*				

Form 4.3-8 Flow Based Biotreatment (DA 1) N/A

Biotreatment BMP Type *Vegetated swale, vegetated filter strip, or other comparable proprietary BMP*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
1 Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in TGD Table 5-5*			
2 Flow depth for water quality treatment (ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
3 Bed slope (ft/ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
4 Manning's roughness coefficient			
5 Bottom width (ft) b_w *= (Form 4.3-5 Item 6 * Item 4) / (1.49 * Item 2^1.67 * Item 3^0.5)*			
6 Side Slope (ft/ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Cross sectional area (ft^2) *A = (Item 5 * Item 2) + (Item 6 * Item 2^2)*			
8 Water quality flow velocity (ft/sec) *V = Form 4.3-5 Item 6 / Item 7*			
9 Hydraulic residence time (min) *Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Length of flow based BMP (ft) *L = Item 8 * Item 9 * 60*			
11 Water surface area at water quality flow depth (ft^2) SA_{top} *= (Item 5 + (2 * Item 2 * Item 6)) * Item 10*			

4.3.5 Conformance Summary

Complete Form 4.3-9 to demonstrate how on-site LID DCV is met with proposed site design hydrologic source control, infiltration, harvest and use, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate (DA 1)

1 Total LID DCV for the Project DA-1 (ft^3): 6,925 *Copy Item 7 in Form 4.2-1*

2 On-site retention with site design hydrologic source control LID BMP (ft^3): 1,375 *Copy Item 30 in Form 4.3-2*

3 On-site retention with LID infiltration BMP (ft^3): 6,392 *Copy Item 16 in Form 4.3-3*

4 On-site retention with LID harvest and use BMP (ft^3): 0 *Copy Item 9 in Form 4.3-4*

5 On-site biotreatment with volume based biotreatment BMP (ft^3): 0 *Copy Item 3 in Form 4.3-5*

6 Flow capacity provided by flow based biotreatment BMP (cfs): *Copy Item 6 in Form 4.3-5*

7 LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP: Yes ☒ No ☐
  If yes, sum of Items 2, 3, and 4 is greater than Item 1
- Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☐ No ☐
  If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized
- On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☐
  If yes, Form 4.3-1 Items 7 and 8 were both checked yes

8 If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

- Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture: ☐
  Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, V_{alt} *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*
- An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility: ☐
  Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed

4.3.6 Hydromodification Control BMP

Use Form 4.3-10 to compute the remaining runoff volume retention, after LID BMP are implemented, needed to address HCOC, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential HCOC. Describe hydromodification control BMP that address HCOC, which may include off-site BMP and/or in-stream controls. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

Form 4.3-10 Hydromodification Control BMPs (DA 1)

1 Volume reduction needed for HCOC performance criteria (ft^3): 7,613 *(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*	**2** On-site retention with site design hydrologic source control, infiltration, and harvest and use LID BMP (ft^3): 7,767 *Sum of Form 4.3-9 Items 2, 3, and 4 Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving HCOC volume reduction*
3 Remaining volume for HCOC volume capture (ft^3): - 154 *Item 1 – Item 2*	**4** Volume capture provided by incorporating additional on-site or off-site retention BMPs (ft^3): 0 *Existing downstream BMP may be used to demonstrate additional volume capture (if so, attach to this WQMP a hydrologic analysis showing how the additional volume would be retained during a 2-yr storm event for the regional watershed)*

5 If Item 4 is less than Item 3, incorporate in-stream controls on downstream waterbody segment to prevent impacts due to hydromodification ☐ *Attach in-stream control BMP selection and evaluation to this WQMP*

6 Is Form 4.2-2 Item 11 less than or equal to 5%: Yes ☐ No ☒

If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site or off-site retention BMP ☒

Discharge from the project will be in full compliance with Agency requirements for connections and discharges to the MS4, including both quality and quantity requirements, and the project will be permitted for the discharge to the MS4.

BMP upstream of a waterbody segment with a potential HCOC may be used to demonstrate increased time of concentration through hydrograph attenuation (if so, show that the hydraulic residence time provided in BMP for a 2-year storm event is equal or greater than the addition time of concentration requirement in Form 4.2-4 Item 15)

- Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities ☐
- Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California ☐

7 Form 4.2-2 Item 12 less than or equal to 5%: Yes ☐ No ☒

If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site or off-site retention BMPs ☒

The proposed Water Quality Infiltration Basin is designed to retain the 100-year runoff volume. Three (3) orifices with 10 inches of diameter each are proposed to facilitate the requirement for diverting the excess rainfall. The outlet rates from the basin are designed to complement the anticipated flow rates in the storm drain on Cedar Avenue during different 100-year storm durations in such a way that the combined flows do not exceed the maximum design storm drain capacity.

BMPs upstream of a waterbody segment with a potential HCOC may be used to demonstrate additional peak runoff reduction through hydrograph attenuation (if so, attach to this WQMP, a hydrograph analysis showing how the peak runoff would be reduced during a 2-yr storm event)

- Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California ☐

4.4 Alternative Compliance Plan (if applicable)

Describe an alternative compliance plan (if applicable) for projects not fully able to infiltrate, harvest and use, or biotreat the DCV via on-site LID practices. A project proponent must develop an alternative compliance plan to address the remainder of the LID DCV. Depending on project type some projects may qualify for water quality credits that can be applied to reduce the DCV that must be treated prior to development of an alternative compliance plan (see Form 2.4-1, Water Quality Credits). Form 4.3-9 Item 8 includes instructions on how to apply water quality credits when computing the DCV that must be met through alternative compliance. Alternative compliance plans may include one or more of the following elements:

- On-site structural treatment control BMP - All treatment control BMP should be located as close to possible to the pollutant sources and should not be located within receiving waters;
- Off-site structural treatment control BMP - Pollutant removal should occur prior to discharge of runoff to receiving waters;
- Urban runoff fund or In-lieu program, if available

Depending upon the proposed alternative compliance plan, approval by the executive officer may or may not be required (see Section 6 of the TGD for WQMP).

N/A

Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMP included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and may require a Maintenance Agreement (consult the jurisdiction's LIP). If a Maintenance Agreement is required, it must also be attached to the WQMP. ***DEFERRED UNTIL THE FINAL WQMP***

Form 5-1 BMP Inspection and Maintenance (use additional forms as necessary)

BMP	Reponsible Party(s)	Inspection/ Maintenance Activities Required	Minimum Frequency of Activities
CHAMBERS	TBD		6-12-18-24 MO

Section 6 WQMP Attachments

6.1. Site Plan and Drainage Plan

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (as described in their local Local Implementation Plan), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

6.3 Post Construction

Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP.

6.4 Other Supporting Documentation

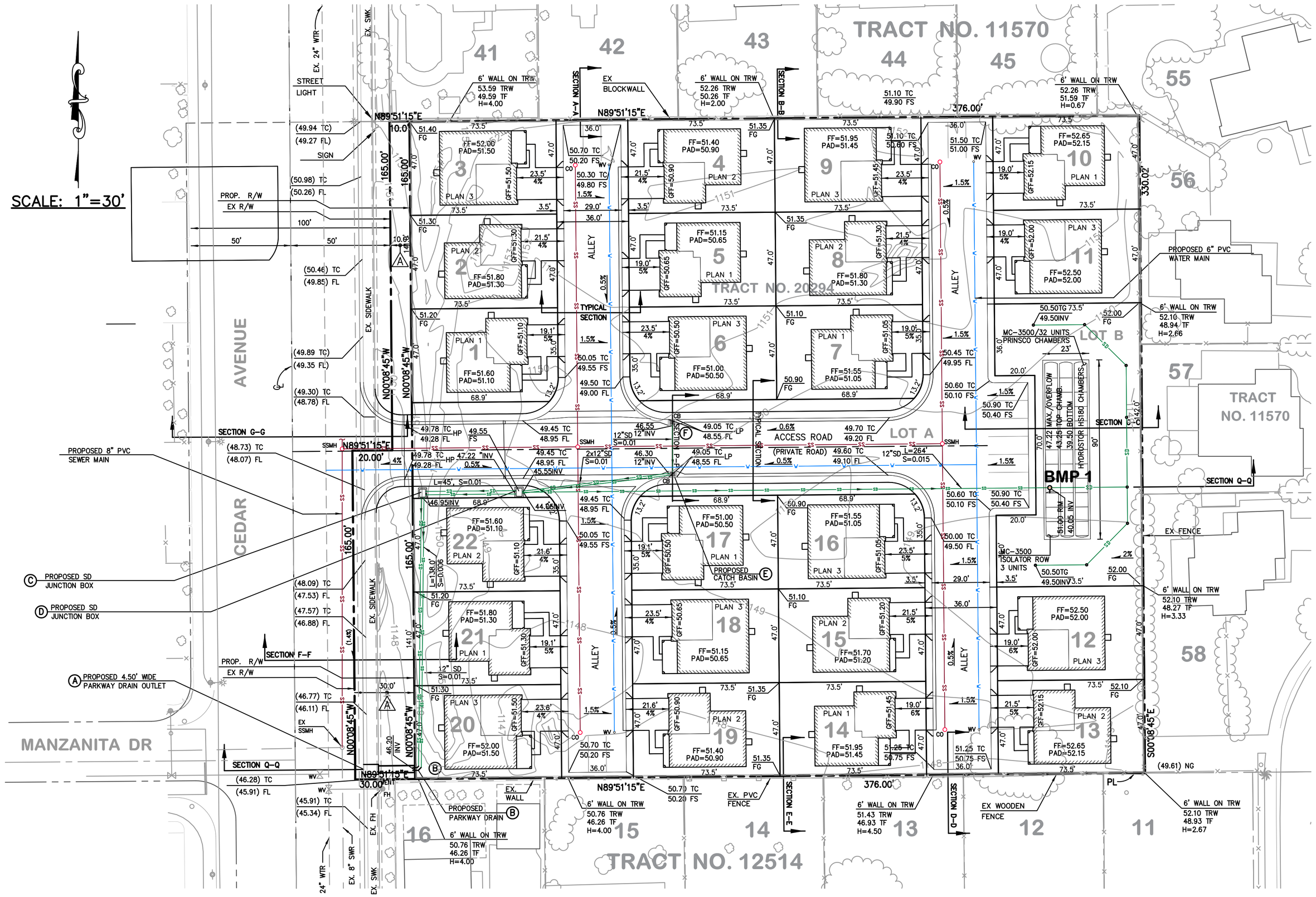
- BMP Educational Materials
- Activity Restriction – C, C&R's & Lease Agreements

Appendix 'A'

WQMP Site Plan

WQMP SITE PLAN
9561 CEDAR AVENUE
RIALTO, CA 92316
TENTATIVE TRACT MAP NO. 20294

SCALE: 1"=30'



LEGEND

- PUBLIC RIGHT-OF-WAY LINE(R/W)
- PROPERTY LINE(℄)
- STREET CENTERLINE(℄)
- CURB AND GUTTER
- WALL
- WOOF FENCE
- SD — STORM DRAIN LINE
- SS — 8" SEWER LINE
- W — 6" WATER LINE
- GRATE DRAIN
- WATER VALVE
- LANDSCAPE
- SEWER CLEANOUT
- TREE (TRUNK OVER 4")
- EXISTING BUILDING
- 100 — EXISTING CONTOUR LINE
- LIGHT
- GAS METER
- ICV

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALTIC CONCRETE
BFP	BACKFLOW PREVENTOR
BW	BACK OF WALK
CATV	CABLE TELEVISION
CB	CATCH BASIN
CLF	CHAIN LINK FENCE
CO	CLEANOUT
DG	DETERIORATED GRAVEL
DWY	DRIVEWAY
EX	EXISTING
FG	FINISHED GROUND / GRADE
FS	FINISH SURFACE
GB	GRADE BREAK
INV	INVERT ELEVATION
NAT	NATURAL LANDSCAPE
NG	NATURAL GROUND
PB	PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PP	POWER POLE
PVC	POLYVINYL CHLORIDE
R	RIDGELINE
SSCO	SANITARY SEWER CLEANOUT
SGN	SIGN AND POST
SS	SANITARY SEWER
TC	TOP OF CURB
TG	TOP OF GRATE
TF	TOP OF FOOTING
TW	TOP OF WALL
UTIL	UTILITY
WM	WATER METER
WV	WATER VALVE

NOTES:

BASIS OF BEARING:
THE CENTERLINE OF CEDAR AVENUE AS S 0°08'45" E PER TRACT NO. 7770, MB 109/10,11.

FLOOD ZONE:
THE PROJECT IS NOT WITHIN 100 YEAR FLOOD ZONE.

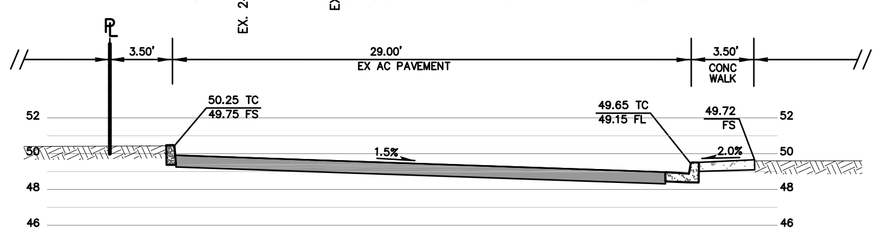
ELEVATION EQUATION
ADD 1100 TO ALL ELEVATIONS EXPRESSED AS XX.XX (SHOWN: 44.00 READ: 1144.00)

EASEMENTS

1. AN EASEMENT IN FAVOR OF THE PUBLIC OVER ANY EXISTING ROADS LYING WITHIN SAID LAND.
   UNPLOTABLE
2. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHT INCIDENTAL THERETO AS RESERVED IN A DOCUMENT.
   PURPOSE: WATER PIPE LINES, INGRESS AND EGRESS
   RECORDED: MAY 31, 1906 IN BOOK 377, PAGE 238 OF DEEDS
   BLANKET EASEMENT

DEDICATIONS

A. PROPOSED R/W DEDICATION.



TYPICAL SECTION
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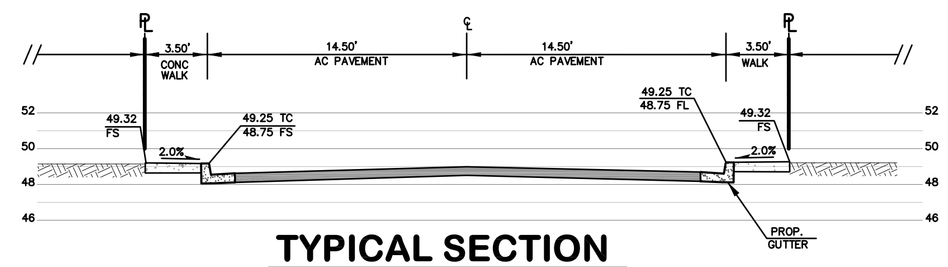

TYPICAL SECTION
ACCESS ROAD
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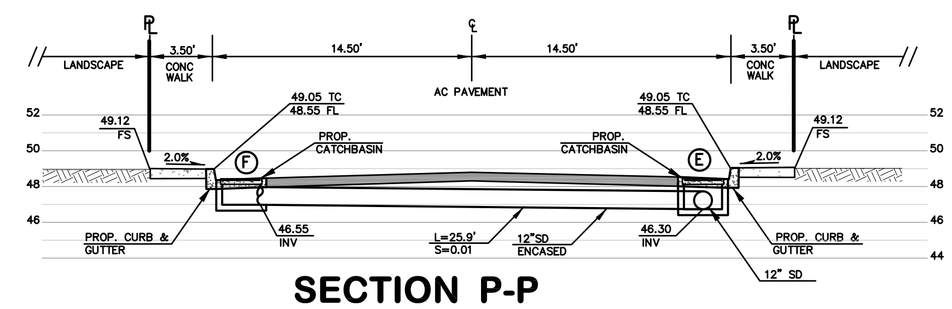

SECTION P-P
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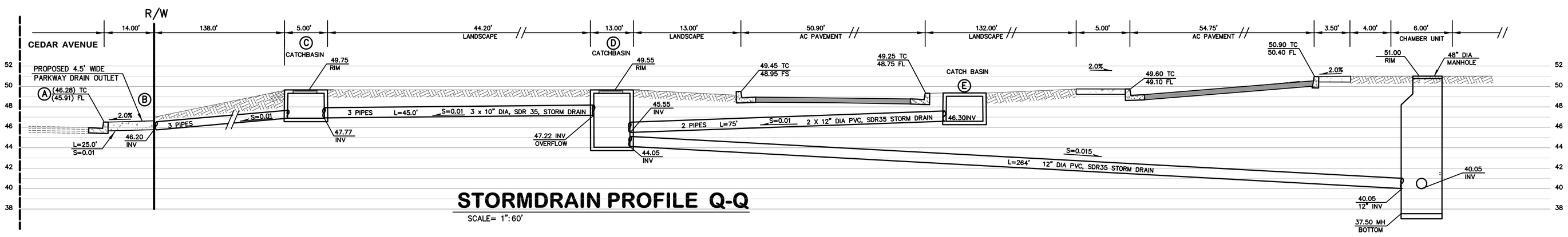

STORMDRAIN PROFILE Q-Q
SCALE= 1":60'

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG

ARCHITECT:

REVISIONS

REV.	DATE:	BY:	DESCRIPTION

PROJECT NAME
WQMP SITE PLAN
9561 CEDAR AVENUE
RIALTO, CA 92316

PREPARED UNDER SUPERVISION OF:
ANDREW GRECHUTA
R.C.E. NO. C52312
02-04-20 DATE
EXP. DATE: 12-31-20

G & G ENGINEERING, INC.
1251 N. MANASSERO ST., STE. 402
ANAHEIM, CA 92807
PHONE: (714) 970-7220
FAX: (714) 970-7244
EMAIL: INFO@MYGNG.COM
CIVIL ENGINEERING
LAND PLANNING
LAND SURVEYING

REGISTERED PROFESSIONAL ENGINEER
ANDREW GRECHUTA
No. C52312
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

DRAWN BY: F.G.
DESIGNED BY: A.G.
CHECKED BY: A.G.

WQMP
SITE PLAN

DATE: 02-04-20
SCALE: AS SHOWN
JOB NO. 858
SHEET NO. W-1

Appendix 'B'

NOAA Precipitation Data

NOAA Atlas 14, Volume 6, Version 2
Location name: Bloomington, California, USA*
Latitude: 34.0803°, Longitude: -117.3964°
Elevation: 1149.39 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.39 (1.16-1.69)	1.81 (1.50-2.20)	2.36 (1.97-2.88)	2.83 (2.33-3.48)	3.48 (2.76-4.42)	3.98 (3.10-5.17)	4.51 (3.42-6.01)	5.06 (3.73-6.95)	5.86 (4.13-8.38)	6.48 (4.42-9.61)
10-min	0.996 (0.828-1.21)	1.30 (1.08-1.57)	1.70 (1.40-2.06)	2.03 (1.67-2.49)	2.49 (1.98-3.17)	2.86 (2.22-3.71)	3.23 (2.45-4.31)	3.64 (2.68-4.98)	4.19 (2.96-6.00)	4.64 (3.16-6.89)
15-min	0.804 (0.668-0.976)	1.04 (0.868-1.27)	1.37 (1.14-1.66)	1.64 (1.34-2.01)	2.01 (1.60-2.55)	2.30 (1.79-2.99)	2.61 (1.98-3.47)	2.93 (2.16-4.02)	3.38 (2.39-4.84)	3.74 (2.55-5.56)
30-min	0.598 (0.498-0.726)	0.780 (0.648-0.946)	1.02 (0.846-1.24)	1.22 (1.00-1.50)	1.50 (1.19-1.90)	1.72 (1.33-2.23)	1.94 (1.47-2.59)	2.18 (1.61-2.99)	2.52 (1.78-3.61)	2.79 (1.90-4.14)
60-min	0.439 (0.366-0.532)	0.571 (0.475-0.693)	0.747 (0.620-0.910)	0.894 (0.735-1.10)	1.10 (0.872-1.39)	1.26 (0.978-1.63)	1.42 (1.08-1.90)	1.60 (1.18-2.19)	1.85 (1.30-2.64)	2.05 (1.39-3.03)
2-hr	0.324 (0.270-0.392)	0.417 (0.347-0.506)	0.540 (0.448-0.658)	0.642 (0.528-0.788)	0.781 (0.620-0.992)	0.889 (0.692-1.16)	1.00 (0.758-1.33)	1.12 (0.823-1.53)	1.28 (0.902-1.83)	1.41 (0.958-2.09)
3-hr	0.270 (0.225-0.328)	0.347 (0.289-0.422)	0.449 (0.372-0.546)	0.531 (0.437-0.652)	0.644 (0.511-0.818)	0.731 (0.568-0.949)	0.820 (0.622-1.09)	0.912 (0.672-1.25)	1.04 (0.734-1.49)	1.14 (0.777-1.69)
6-hr	0.193 (0.161-0.235)	0.248 (0.207-0.302)	0.320 (0.265-0.390)	0.378 (0.311-0.464)	0.456 (0.362-0.579)	0.516 (0.401-0.670)	0.576 (0.437-0.767)	0.638 (0.470-0.875)	0.723 (0.510-1.03)	0.789 (0.537-1.17)
12-hr	0.129 (0.107-0.156)	0.166 (0.138-0.202)	0.214 (0.177-0.260)	0.252 (0.207-0.310)	0.303 (0.241-0.385)	0.342 (0.266-0.444)	0.381 (0.289-0.507)	0.420 (0.310-0.576)	0.473 (0.334-0.677)	0.514 (0.350-0.763)
24-hr	0.087 (0.077-0.100)	0.113 (0.100-0.131)	0.147 (0.129-0.169)	0.173 (0.151-0.202)	0.208 (0.176-0.251)	0.235 (0.195-0.289)	0.261 (0.212-0.329)	0.288 (0.227-0.373)	0.324 (0.245-0.436)	0.351 (0.257-0.489)
2-day	0.053 (0.047-0.061)	0.070 (0.062-0.081)	0.092 (0.081-0.107)	0.110 (0.096-0.129)	0.134 (0.114-0.162)	0.152 (0.127-0.188)	0.171 (0.138-0.215)	0.190 (0.149-0.245)	0.215 (0.163-0.290)	0.234 (0.171-0.327)
3-day	0.038 (0.033-0.043)	0.051 (0.045-0.059)	0.068 (0.060-0.079)	0.082 (0.072-0.096)	0.101 (0.086-0.122)	0.116 (0.096-0.143)	0.131 (0.106-0.165)	0.147 (0.116-0.190)	0.168 (0.127-0.227)	0.185 (0.135-0.258)
4-day	0.030 (0.027-0.035)	0.041 (0.036-0.048)	0.056 (0.049-0.065)	0.068 (0.059-0.079)	0.084 (0.071-0.101)	0.097 (0.080-0.119)	0.110 (0.089-0.139)	0.124 (0.098-0.160)	0.143 (0.108-0.192)	0.157 (0.115-0.220)
7-day	0.020 (0.017-0.023)	0.027 (0.024-0.031)	0.037 (0.033-0.043)	0.045 (0.040-0.053)	0.057 (0.048-0.068)	0.065 (0.054-0.080)	0.075 (0.060-0.094)	0.084 (0.066-0.109)	0.097 (0.074-0.131)	0.108 (0.079-0.151)
10-day	0.015 (0.013-0.017)	0.021 (0.018-0.024)	0.029 (0.025-0.033)	0.035 (0.031-0.041)	0.044 (0.037-0.053)	0.051 (0.042-0.063)	0.058 (0.047-0.073)	0.066 (0.052-0.085)	0.076 (0.058-0.103)	0.085 (0.062-0.118)
20-day	0.009 (0.008-0.010)	0.013 (0.011-0.015)	0.018 (0.015-0.020)	0.022 (0.019-0.025)	0.027 (0.023-0.033)	0.032 (0.026-0.039)	0.037 (0.030-0.046)	0.042 (0.033-0.054)	0.049 (0.037-0.066)	0.054 (0.040-0.076)
30-day	0.007 (0.006-0.008)	0.010 (0.009-0.012)	0.014 (0.012-0.016)	0.017 (0.015-0.020)	0.022 (0.018-0.026)	0.025 (0.021-0.031)	0.029 (0.024-0.037)	0.033 (0.026-0.043)	0.039 (0.030-0.053)	0.044 (0.032-0.062)
45-day	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.011 (0.010-0.013)	0.014 (0.012-0.016)	0.017 (0.015-0.021)	0.020 (0.017-0.025)	0.023 (0.019-0.029)	0.027 (0.021-0.034)	0.031 (0.024-0.042)	0.035 (0.026-0.049)
60-day	0.005 (0.004-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.011)	0.012 (0.010-0.014)	0.015 (0.013-0.018)	0.017 (0.014-0.021)	0.020 (0.016-0.025)	0.023 (0.018-0.030)	0.027 (0.021-0.037)	0.031 (0.023-0.043)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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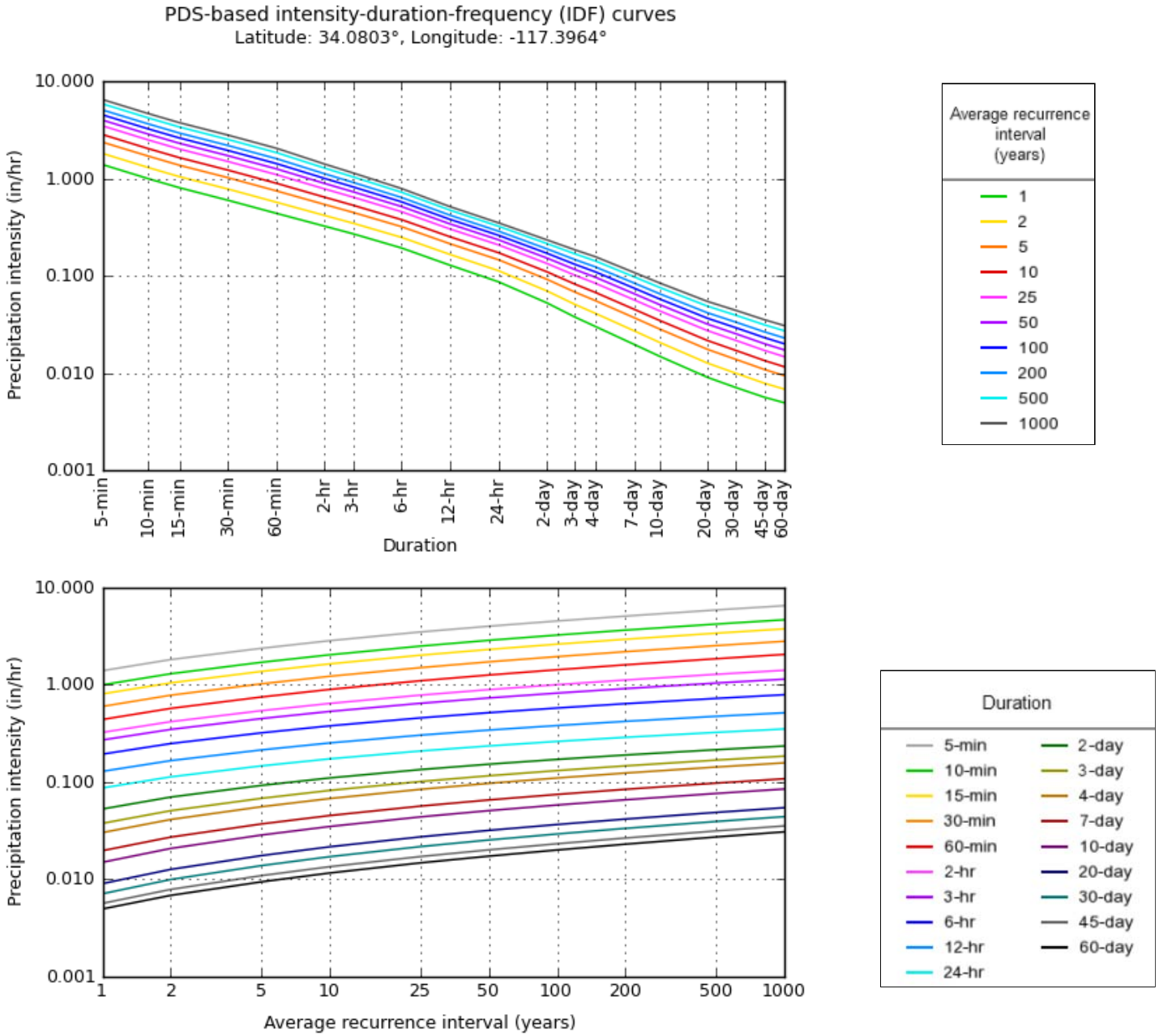
PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Tue Feb 4 19:00:40 2020

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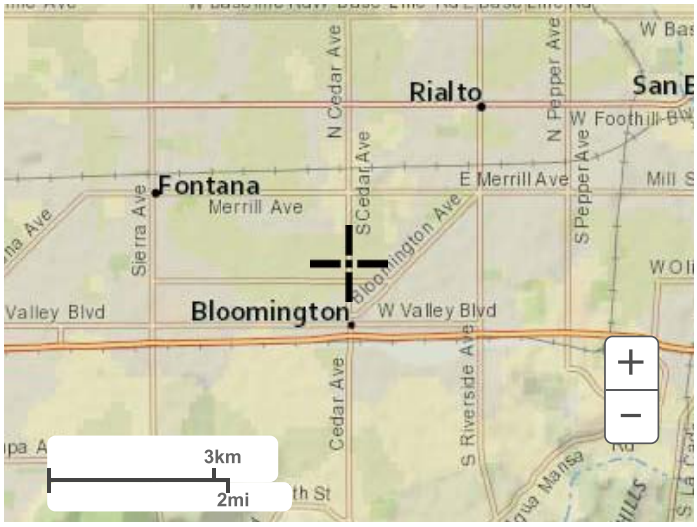
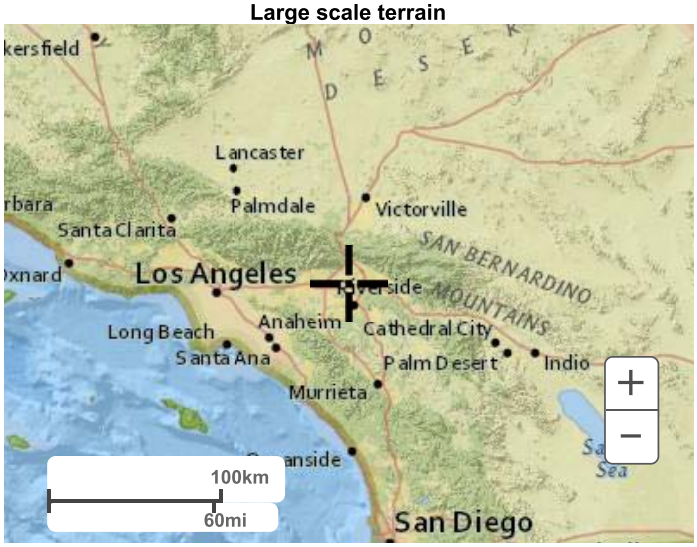
Maps & aerials

Small scale terrain



Large scale terrain

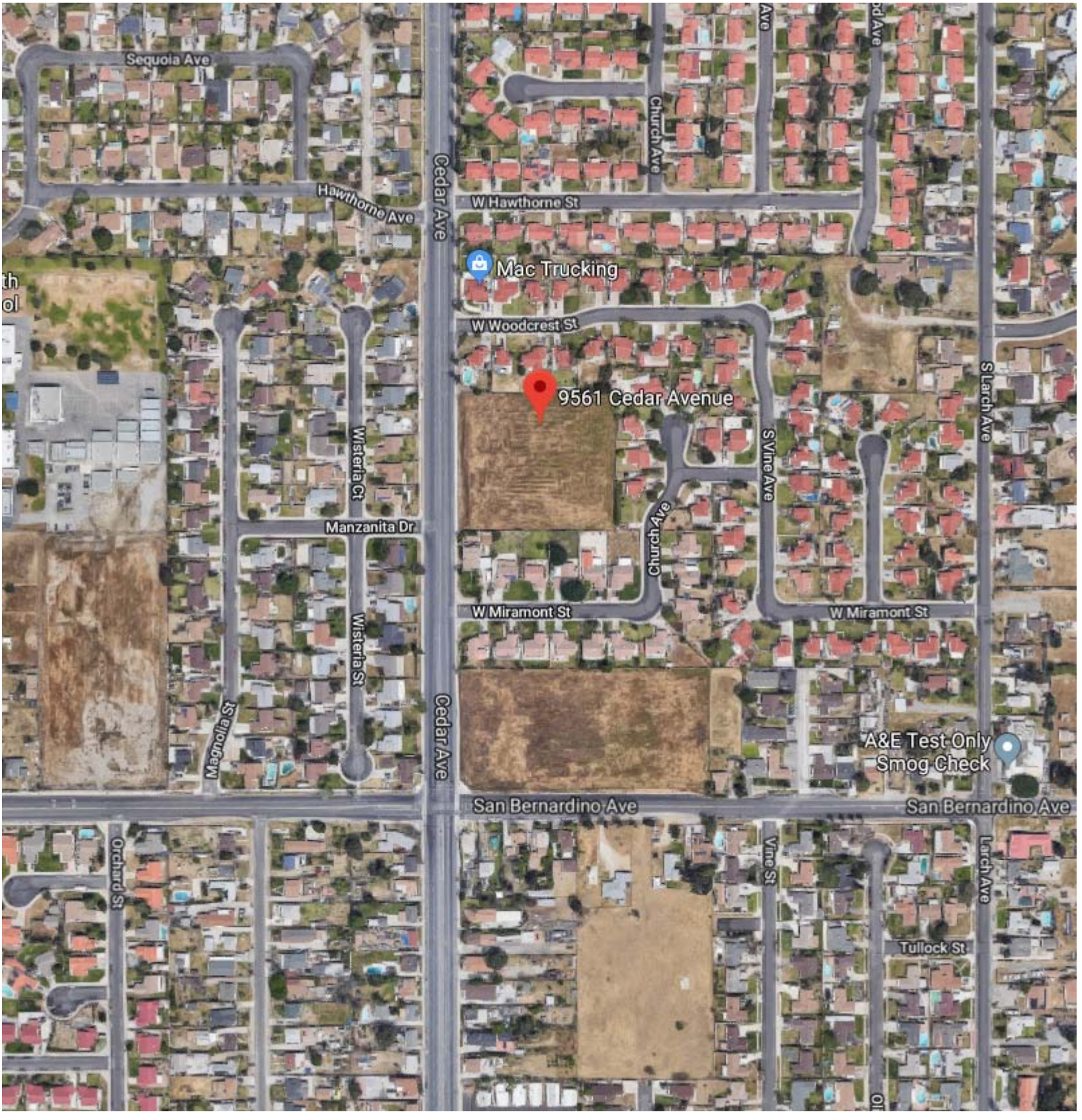


Large scale map

Large scale aerial

Appendix 'C'

Site Location Map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Hawthorne Ave
Cedar Ave
Church Ave
W Hawthorne St
Mac Trucking
W Woodcrest St
9561 Cedar Avenue
S Vine Ave
S Larch Ave
Wisteria Ct
Manzanita Dr
Church Ave
W Miramont St
W Miramont St
Wisteria St
Magnolia St
Cedar Ave
A&E Test Only
Smog Check
San Bernardino Ave
San Bernardino Ave
Orchard St
Vine St
Larch Ave
Tullock St

APPENDIX G
CONSTRUCTION NOISE ANALYSIS

260 E. Baker St. | Suite 200 | Costa Mesa, CA 92626 | (949) 660-1994
urbanxroads.com

June 22, 2020

Ms. Cheryl Tubbs
Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408

SUBJECT: CEDAR VILLAS PRIVATE RESIDENTIAL NEIGHBORHOOD CONSTRUCTION NOISE ANALYSIS

Dear Ms. Cheryl Tubbs:

Urban Crossroads, Inc. is pleased to provide the following Construction Noise Analysis for Cedar Villas Private Residential Neighborhood Project ("Project"), which is located at 9561 Cedar Avenue, between W. Woodcrest Street and W. Miramont Street, in the City of Rialto as shown on Exhibit A. The purpose of this noise analysis is to assess the potential construction noise levels and demonstrate that the Cedar Villas Private Residential Neighborhood Project satisfies the City of Rialto construction noise criteria at nearby noise sensitive receiver locations.

PROJECT DESCRIPTION

Exhibit B illustrates the site plan for the Project. As indicated on Exhibit B, the proposed Citrus Green Specific Plan (Tentative Tract 20294) Project consists of 22 single family detached residential units. The proposed residential Project is located within an existing residential neighborhood.

RECEIVER LOCATIONS

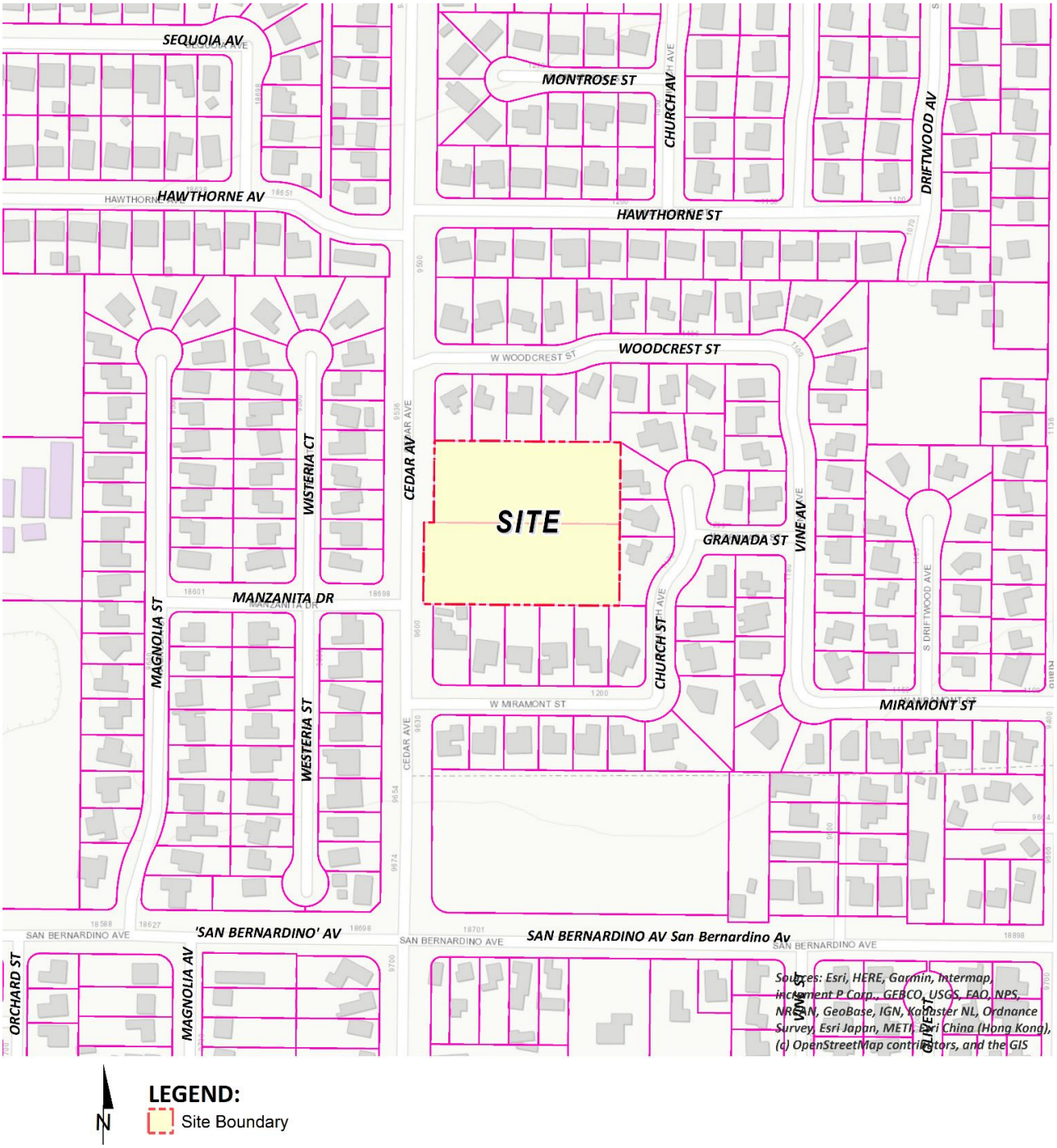
Receivers represent a location of noise sensitive areas and are used to estimate the construction noise level impacts. To describe the potential off-site Project construction noise level impacts, 16 sensitive receiver locations in the vicinity of the Project site were identified, including the closest sensitive residential receiver located at 1162 Church Avenue approximately 12 feet east of the Project site as shown on Exhibit C. Sensitive uses or receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land.

For purposes of analysis, it is assumed that the receiver locations reasonably represent the noise-sensitive land use since it is unlikely that residents will be frequently occupying the outdoor areas abutting the Project site boundary/property line. The outdoor living areas most likely to be used are the areas of frequent human use or backyard patio of the adjacent residences. FHWA guidance indicating that the outdoor living areas are generally limited to areas of frequent human use supports this approach. (1)

All distances are measured from the Project site boundary to the backyard patio areas of the adjacent residences or at the building façade, whichever is closer to the Project site. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from

distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

EXHIBIT A: LOCATION MAP



N

LEGEND:

Site Boundary

EXHIBIT B: SITE PLAN

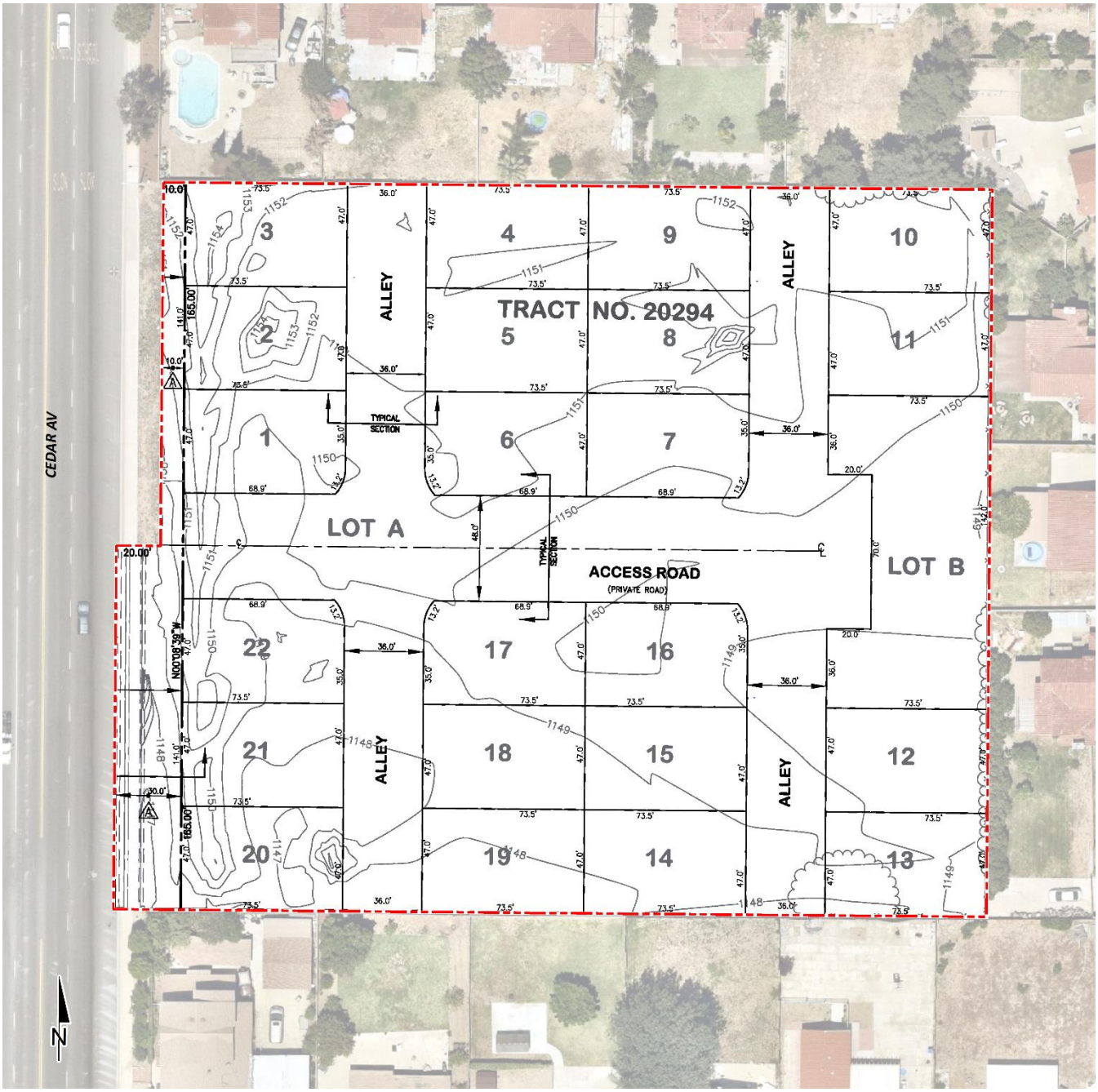
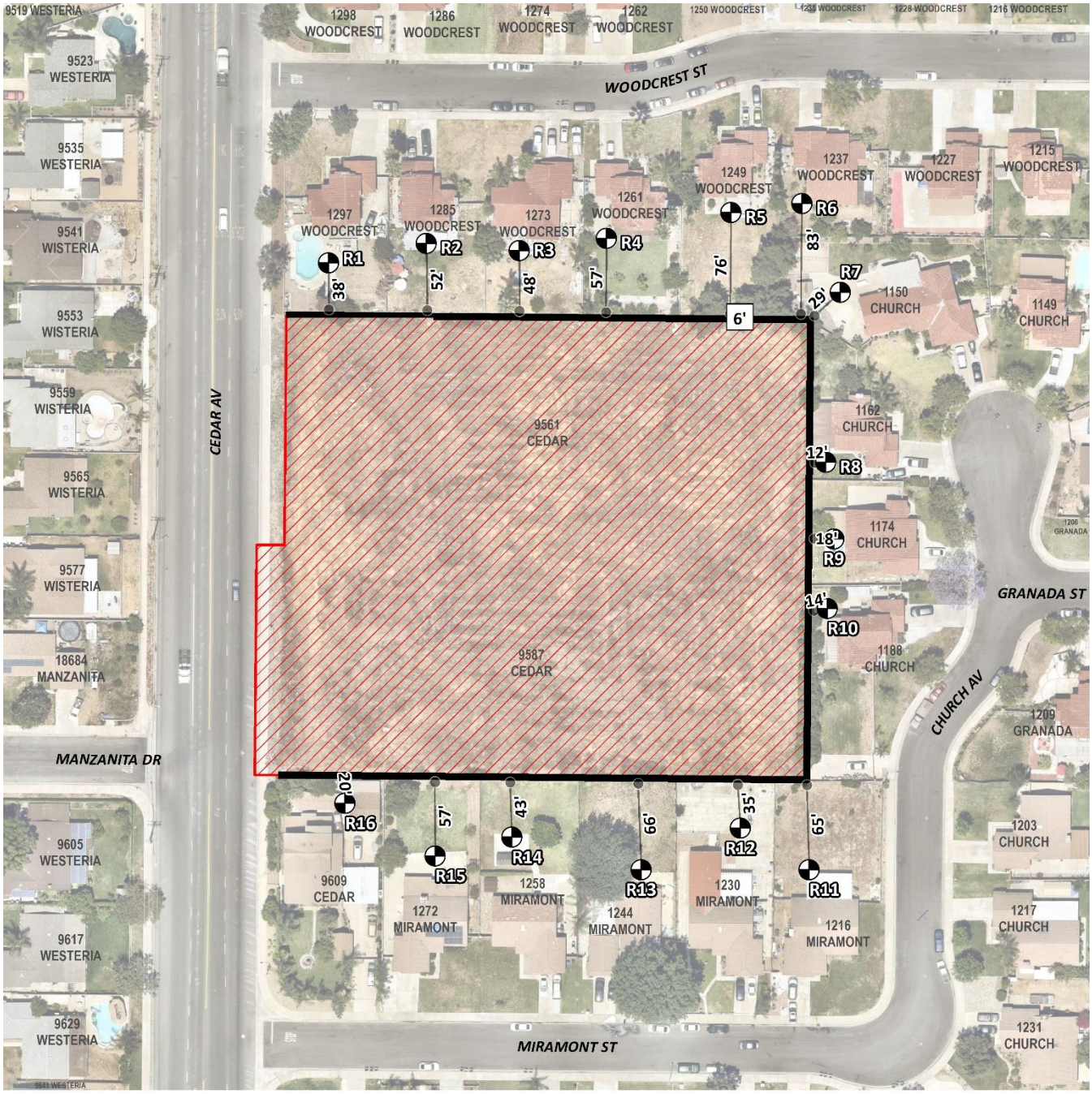


EXHIBIT C: RECEIVER LOCATIONS



LEGEND:

- Existing Barrier
- 6' Existing Barrier Height (in feet)
- Construction Activity
- Receiver Locations
- Distance from receiver to Project site boundary (in feet)

CONSTRUCTION NOISE

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at nearby noise sensitive residential receivers surrounding the Project site. Using sample reference noise levels to represent the planned construction activities of Cedar Villas Private Residential Neighborhood site, this analysis estimates the Project-related construction noise levels at the 16 nearby sensitive receiver locations.

CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of Cedar Villas Private Residential Neighborhood Project, noise from construction activities are typically limited to the hours of operation established under a City's Municipal Code. The City of Rialto Municipal Code, Section 9.50.070, states that construction activities are permitted between the hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1st to April 30th, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1st to September 30th, and 8:00 a.m. to 5:00 p.m. on Saturdays any time of year; with no activity allowed on Sundays or state holidays. (1) The Noise Control Chapter 9.50 of the City of Rialto Municipal Code is included in Appendix A.

While the City establishes limits to the hours during which construction activity may take place, neither the General Plan nor the Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers. To evaluate whether the Project will generate potentially significant construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual.* The FTA manual provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use. (2 p. 179)

CONSTRUCTION REFERENCE NOISE LEVELS

Noise generated by the Project construction equipment would include a combination of dozers, graders, scrapers, trucks, power tools, concrete mixers, and portable generators. This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction.

Table 1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances, all construction noise level measurements presented on Table 1 have been adjusted to describe a common reference distance of 50 feet. The reference noise level measurements were collected from existing construction operations with similar equipment as those expected with the Project.

While the construction size, scope of work, and ambient noise levels vary for the reference noise level measurements, each piece of construction equipment fully represents the expected noise levels for each activity. The construction noise analysis does not rely on any one reference noise level to fully describe the potential impacts. Rather, a combination of individual construction noise level measurements is used to describe typical activities for each stage of construction.

TABLE 1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})	Highest Reference Noise Level (dBA L_{eq})
Site Preparation	Scraper, Water Truck, & Dozer Activity	75.3	75.3
	Backhoe	64.2	
	Water Truck Pass-By & Backup Alarm	71.9	
Grading	Rough Grading Activities	73.5	73.5
	Water Truck Pass-By & Backup Alarm	71.9	
	Construction Vehicle Maintenance Activities	67.5	
Building Construction	Foundation Trenching	68.2	71.6
	Framing	62.3	
	Concrete Mixer Backup Alarms & Air Brakes	71.6	
Paving	Concrete Mixer Truck Movements	71.2	71.2
	Concrete Paver Activities	65.6	
	Concrete Mixer Pour & Paving Activities	65.9	
Architectural Coating	Air Compressors	65.2	65.2
	Generator	64.9	
	Crane	62.3	

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.

Further, the reference noise level measurements represent worst-case construction equipment activities since they account for only those noise levels measured during actual activity of each piece(s) of equipment. The construction activities will occur throughout the day at varying degrees of intensity and at different locations on the Project site.

CADNAA CONSTRUCTION NOISE PREDICTION MODEL

To fully describe the construction noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels. Using the ISO 9613 protocol, CadnaA will calculate the noise levels at each receiver location using

the ground absorption, distance, and topography features. The noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.0 was used in the noise analysis representing hard site conditions. Appendix B includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location. As shown on Table 2, the construction noise levels are expected to range from 72.7 to 78.9 dBA L_{eq} at the nearby receiver locations. Appendix B includes the detailed CadnaA construction noise model inputs.

CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearby receiver locations, a construction-related noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess construction noise level impacts. The construction noise analysis shows that the nearby receiver locations will satisfy the 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 3. Therefore, the noise impacts due to Project construction are considered *less than significant* at all receiver locations.

TABLE 2: CONSTRUCTION NOISE LEVELS

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
R1	75.5	73.7	71.8	71.6	65.4	75.5
R2	75.5	73.7	71.8	71.6	65.4	75.5
R3	76.1	74.3	72.4	72.2	66.0	76.1
R4	75.5	73.7	71.8	71.6	65.4	75.5
R5	73.8	72.0	70.1	69.9	63.7	73.8
R6	72.7	70.9	69.0	68.8	62.6	72.7
R7	74.7	72.9	71.0	70.8	64.6	74.7
R8	78.9	77.1	75.2	75.0	68.8	78.9
R9	78.2	76.4	74.5	74.3	68.1	78.2

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
R10	78.7	76.9	75.0	74.8	68.6	78.7
R11	73.3	71.5	69.6	69.4	63.2	73.3
R12	76.0	74.2	72.3	72.1	65.9	76.0
R13	74.9	73.1	71.2	71.0	64.8	74.9
R14	76.4	74.6	72.7	72.5	66.3	76.4
R15	75.4	73.6	71.7	71.5	65.3	75.4
R16	77.6	75.8	73.9	73.7	67.5	77.6

[1] Noise receiver locations are shown on Exhibit C.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations. CadnaA construction noise model inputs are included in Appendix B.

TABLE 3: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Location	Distance to Construction Activity (Feet)	Construction Noise Levels (dBA L_{eq})		
			Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	1297 Woodcrest St.	38'	75.5	80	No
R2	1285 Woodcrest St.	52'	75.5	80	No
R3	1273 Woodcrest St.	48'	76.1	80	No
R4	1261 Woodcrest St.	57'	75.5	80	No
R5	1249 Woodcrest St.	76'	73.8	80	No
R6	1237 Woodcrest St.	83'	72.7	80	No
R7	1150 Church Av.	29'	74.7	80	No
R8	1162 Church Av.	12'	78.9	80	No
R9	1174 Church Av.	18'	78.2	80	No
R10	1188 Church Av.	14'	78.7	80	No
R11	1216 Miramont St.	65'	73.3	80	No
R12	1230 Miramont St.	35'	76.0	80	No
R13	1244 Miramont St.	66'	74.9	80	No
R14	1258 Miramont St.	43'	76.4	80	No
R15	1272 Miramont St.	57'	75.4	80	No
R16	9609 Cedar Av.	20'	77.6	80	No

[1] Noise receiver locations are shown on Exhibit C.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Table 2.
[3] FTA Transit Noise and Vibration Impact Assessment Manual construction noise level thresholds.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

CONSTRUCTION NOISE ABATEMENT MEASURES

Recognizing that the construction activities may create short-term temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the Project site boundary, the Project should consider implementing the following construction noise abatement measures.

1. The construction contractor shall locate/stage all stationary equipment to create the greatest physical distance between construction-related noise sources and noise-sensitive receivers nearest the Project site during all Project construction activities.
2. The construction contractor shall post a publicly visible sign with the telephone number and designated person to contact regarding noise complaints. The construction contractor, within 48 hours of receipt of a noise complaint, shall either take corrective actions or, if immediate action is not feasible, provide a plan or corrective action to address the source of the noise complaint.
3. During all Project site construction, the construction contractor shall equip all construction equipment, mobile or stationary, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise-sensitive receivers nearest the Project site.
4. Electrically powered air compressors and similar power tools shall be used, when feasible, in place of diesel equipment.
5. No music or electronically reinforced speech from construction workers shall be allowed within the Project site.
6. Haul truck deliveries should be subject to the hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1st to April 30th, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1st to September 30th, and 8:00 a.m. to 5:00 p.m. on Saturdays any time of year; with no activity allowed on Sundays or state holidays (City of Rialto Municipal Code, Section 9.50.070).
7. Adjacent residents on Woodcrest Street, Church Avenue, Miramont Street and Cedar Avenue should be notified prior to the commencement of Project construction. Notices should include the contact information for City staff and/or the construction contractor and shall be provided at least one week prior to commencement of Project construction activities.

CONCLUSIONS

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site. Project construction noise levels are restricted to the hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1st to April 30th, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1st to September 30th, and 8:00 a.m. to 5:00 p.m. on

Saturdays any time of year; with no activity allowed on Sundays or state holidays. While the City limits the hours during which construction activity may take place, neither the City's General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, therefore, this analysis relies on a reasonable construction-related FTA noise level threshold of 80 dBA L_{eq}. The analysis shows that the Project-related short-term construction noise levels ranging from 72.7 to 78.9 dBA L_{eq} will satisfy the 80 dBA L_{eq} thresholds at all receiver locations. Therefore, based on the results of this analysis, all nearby sensitive receiver locations will experience *less than significant* impacts due to Project construction noise levels. If you have any questions, please contact me directly at (949) 336-5979.

Respectfully submitted,

URBAN CROSSROADS, INC.

Bill Lawson, P.E., INCE
Principal

REFERENCES

1. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December, 2011.
2. **City of Rialto.** *Municipal Code, Chapter 9.50 - Noise Control.*
3. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment.* September 2018.

APPENDIX A

CITY OF RIALTO MUNICIPAL CODE COMMUNITY NOISE CONTROL

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Chapter 9.50 - NOISE CONTROL

Sections:

9.50.010 - Purpose and intent.

A. It is the purpose of these regulations to implement the goals and objectives of the noise element of the city's general plan to establish community-wide noise standards and to serve as a reference for locating other city regulations relating to noise in the community. It is further the purpose of these regulations to recognize that the existence of excessive noise within the city is a condition that is detrimental to the health, safety, welfare and quality of life of the citizens and shall be regulated in the public interest.

B. In furtherance of the foregoing purpose, it is found and declared as follows:

1. The making, creation or maintenance of such loud, unnecessary, unnatural or unusual noises that are prolonged, unusual, annoying, disturbing and unnatural in their time, place and use are a detriment to public health, comfort, convenience, safety, general welfare and the peace and quiet of the city and its inhabitants; and

2. The public necessity for the provisions and prohibitions contained in and enacted by this chapter is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions set forth in and enacted by this chapter are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, general welfare and property and the peace and quiet of the city and its inhabitants.

(Ord. 1417 § 1 (part), 2008)

9.50.020 - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

"Construction equipment" means tools, machinery or equipment used in connection with construction operations, including all types of "special construction" equipment as defined in the pertinent sections of California Vehicle Code when used in the construction process on any construction site, home improvement site or property maintenance site, regardless of whether such site be located on highway or off highway.

"Enforcement officer" means a city code enforcement officer or peace officer authorized to enforce the provisions and prohibitions of this chapter pursuant to Section 9.50.080.

"Plainly audible" means any sound that can be detected by a person using his or her unaided hearing faculties. As an example, if the sound source under investigation is a portable or personal vehicular sound amplification or reproduction device, the investigating enforcement officer need not determine the title of a song, specific words, or the artist performing the song. The detection of the vibration from the rhythmic bass component of the music is sufficient to constitute a plainly audible sound.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk, alley or similar place, owned or controlled by a government entity.

"Public space" means any real property or structures on real property, owned by a government entity and normally accessible to the public, including but not limited to parks and other recreation areas.

"Responsible person" means:

1. Any person who owns, leases or is lawfully in charge of the property or motor vehicle where the noise violation takes place; or

2. Any person who owns or controls the source of the noise or violation. If the responsible person is a minor, then the parent or guardian who has custody of the child at the time of the violation shall be the responsible person who is liable under this chapter.

(Ord. 1417 § 1 (part), 2008)

9.50.030 - Prohibited acts.

A. It is unlawful for any person to engage in the following activities:

1. Sounding any horn or signal device on any automobile, motorcycle, bus or other motor vehicle in any other manner or circumstances or for any other purpose than required or permitted by the Vehicle Code or other California laws.

2. Racing the engine of any motor vehicle while the vehicle is not in motion, except when necessary to do so in the course of repairing, adjusting or testing the same.

3. Operating or permitting the use of any motor vehicle on any public right-of-way or public place or on private property within a residential zone for which the exhaust muffler, intake muffler or any other noise abatement device has been modified or changed in a manner such that the noise emitted by the motor vehicle is increased above that emitted by the vehicle as originally manufactured.

4. Operating or permitting the use or operation of personal or commercial music or sound amplification or production equipment that is:

   a. Plainly audible across property boundaries;

   b. Plainly audible through partitions common to two residences within a building;

   c. Plainly audible at a distance of fifty feet in any direction from the source of music or sound between the hours of eight a.m. and ten p.m.; or

   d. Plainly audible at a distance of twenty-five feet in any direction from the source of music or sound between the hours of ten p.m. and eight a.m.

5. The intentional sounding or permitting the sounding outdoors of any fire, burglar, or civil defense alarm, siren, whistle, or any motor vehicle burglar alarm, except for emergency purposes or for testing, unless such alarm is terminated within fifteen minutes of activation.

6. Creating excessive noise adjacent to any school, church, court or library while the same is in use, or adjacent to any hospital or care facility, which unreasonably interferes with the workings of such institution, or which disturbs or unduly annoys patients in the hospital, students in the school, users of the court or library, provided conspicuous signs are displayed in such streets indicating the presence of a school, institution of learning, church, court or hospital.

7. Making or knowingly and unreasonably permitting to be made any unreasonably loud, unnecessary or unusual noise that disturbs the comfort, repose, health, peace and quiet or which causes discomfort or annoyance to any reasonable person of normal sensitivity. The characteristics and conditions that may be considered in determining whether this section has been violated, include, but are not limited to, the following:

   a. The level of noise;

   b. Whether the nature of the noise is usual or unusual;

   c. Whether the origin of the noise is natural or unnatural;

   d. The level of the background noise;

   e. The proximity of the noise to sleeping facilities;

   f. The nature and zoning of the areas within which the noise emanates;

g. The density of the inhabitation of the area within which the noise emanates;

h. The time of day or night the noise occurs;

i. The duration of the noise;

j. Whether the noise is recurrent, intermittent or constant; and

k. Whether the noise is produced by a commercial or noncommercial activity.

B. A violation of this section is an infraction and a public nuisance.

C. A violation of this section may result in the following:

1. Issuance of an infraction citation;

2. Issuance of a notice of public nuisance;

3. Imposition of criminal and civil penalties; and

4. Confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise.

D. An enforcement officer who encounters a violation of this section may issue a written notice to the responsible person demanding immediate abatement of the violation (written notice). The written notice shall inform the recipient that a second violation of the same provision within a seventy-two-hour period may result in the issuance of a criminal citation and/or notice of public nuisance, the imposition of criminal and civil penalties, and confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise.

E. Any peace officer who encounters a second violation of this section within a seventy-two-hour period following issuance of a written notice is empowered to confiscate and impound as evidence, any or all of the components amplifying or transmitting the sound.

F. Any person claiming legal ownership of the items confiscated and impounded under this section may request the return of the item by filing a written request with the police department within seven calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.

(Ord. 1417 § 1 (part), 2008)

9.50.040 - Excessive noise and vibration emanating from a motor vehicle.

A. No person shall operating or occupy a motor vehicle on any public right-of-way, public place or private property, while operating or permitting the use or operation of any radio, stereo receiver, musical instrument, television, computer, compact disc player, tape recorder, cassette player or any other device for the production or reproduction of sound from within the motor vehicle so that the sound is plainly audible at a distance of fifty feet from such vehicle, or in the case of a motor vehicle on private property, beyond the property line.

B. Pursuant to Section 9.50.130, a violation of this section is a misdemeanor offense and a public nuisance.

C. A violation of this section may result in the following:

1. Issuance of a misdemeanor citation;

2. Issuance of a notice of public nuisance;

3. Imposition of criminal and civil penalties; and

4. Immediate confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise or the immediate confiscation and impoundment of the motor

vehicle to which the component is attached if the same may not be removed without causing harm to the vehicle or the component.

D. Any person claiming legal ownership of a motor vehicle confiscated and impounded under this section may request the return of the vehicle by filing a written request with the police department within seven calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.

E. Any person claiming legal ownership of the items confiscated and impounded under this section, other than a motor vehicle, may request the return of the item by filing a written request with the police department, which shall be processed in accordance with the procedures adopted by the department.

(Ord. 1417 § 1 (part), 2008)

9.50.050 - Controlled hours of operation.

It is unlawful for any person to engage in the following activities other than between the hours of seven a.m. and eight p.m. in all zones:

A. Operate or permit the use of powered model vehicles and planes;

B. Load or unload any vehicle, or operate or permit the use of dollies, carts, forklifts, or other wheeled equipment that causes any impulsive sound, raucous or unnecessary noise within one thousand feet of a residence;

C. Operate or permit the use of domestic power tools, or machinery or any other equipment or tool in any garage, workshop, house or any other structure;

D. Operate or permit the use of gasoline or electric powered leaf blowers, such as commonly used by gardeners and other persons for cleaning lawns, yards, driveways, gutters and other property;

E. Operate or permit the use of privately operated street/parking lot sweepers or vacuums, except that emergency work and/or work necessitated by unusual conditions may be performed with the written consent of the city manager;

F. Operate or permit the use of pile driver, steam or gasoline shovel, pneumatic hammer, steam or electric hoist or other similar devices;

G. Operate or permit the use of electrically operated compressor, fan, and other similar devices;

H. Perform ground maintenance on golf course grounds and tennis courts contiguous to golf courses that creates a noise disturbance across a residential or commercial property line;

I. Operate or permit the use of any motor vehicle with a gross vehicle weight rating in excess of ten thousand pounds, or of any auxiliary equipment attached to such a vehicle, including but not limited to refrigerated truck compressors, for a period longer than fifteen minutes in any hour while the vehicle is stationary and on a public right-of-way or public space except when movement of the vehicle is restricted by other traffic;

J. Repair, rebuild, reconstruct or dismantle any motor vehicle or other mechanical equipment or devices in a manner so as to be plainly audible across property lines.

(Ord. 1417 § 1 (part), 2008)

9.50.060 - Exemptions.

The following activities and noise sources shall be exempt from the provisions of this chapter:

A. Those noise events in the community (e.g., airport noise, arterial traffic noise, railroad noise) that are more accurately measured by application of the general plan noise element policy, utilizing the community noise equivalent level (CNEL) method;

B. Activities conducted on the grounds of any public or private school during regular hours of operation;

C. Outdoor gatherings, public dances, shows and sporting and entertainment events provided the events are authorized by the city;

D. Activities conducted at public spaces during regular hours of operation;

E. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work;

F. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions;

G. Mobile noise sounds associated with agricultural operations provided such operations do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturdays, or at any time on Sunday or a state holiday;

H. Mobile noise sources associated with agricultural pest control through pesticide application;

I. Warning devices necessary for the protection of the public safety, including, but not limited to, police, fire and ambulance sirens and train horns and sounds for the purpose of alerting persons to the existence of an emergency;

J. Construction, repair or excavation necessary for the immediate preservation of life or property;

K. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public work projects or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission;

L. Construction, repair or excavation work performed pursuant to a valid written agreement with the city or any of its political subdivisions which agreement provides for noise mitigation measures;

M. Any activity to the extent regulation thereof has been preempted by state or federal law;

N. Any activity or noise source governed elsewhere in this code. Such activities include but are not limited to:

1. Security alarm systems (see Chapter 7.01 of this code),

2. Animal noise (see Title 6 of this code),

3. Sound trucks and advertising by sound (see Chapter 9 of this code),

4. Performance standards for various commercial and industrial uses (see Title 18 of this code);

O. Sounds generated in commercial and industrial zones that are necessary and incidental to the uses permitted therein;

P. Sounds generated from or incidental to emergency repairs to any public works function; and

Q. Sounds generated in connection with speech or communication protected by the U.S. Constitution or the California Constitution, expect to the extent such sounds are subject to permissible time, manner and place restrictions.

(Ord. 1417 § 1 (part), 2008)

9.50.070 - Disturbances from construction activity.

A. No person shall be engaged or employed, or cause any other person to be engaged or employed, in any work of construction, erection, alteration, repair, addition, movement, demolition, or improvement to any building or structure except within the hours provided for by subsection B of this section.

B. The permitted hours for such construction work are as follows:

1. October 1st through April 30th.

Monday—Friday	7:00 a.m. to 5:30 p.m.
Saturday	8:00 a.m. to 5:00 p.m.
Sunday	No permissible hours
State holidays	No permissible hours

2. May 1st through September 30th.

Monday—Friday	6:00 a.m. to 7:00 p.m.
Saturday	8:00 a.m. to 5:00 p.m.
Sunday	No permissible hours
State holidays	No permissible hours

C. For purposes of this section, the following definitions shall apply:

1. "Building" means any structure used or intended for supporting or sheltering any use or occupancy.

2. "Structure" means that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

D. For purposes of this section, the following exceptions shall apply:

1. Emergency repair of existing installations, equipment, or appliances; and

2. Such work that complies with the terms and conditions of a written early work permit issued by the city manager or his or her designee upon a showing of a sufficient need and justification for the permit due to hot or inclement weather, the use of an unusually long process material, or other circumstances of an unusual and compelling nature.

(Ord. 1417 § 1 (part), 2008)

9.50.080 - Administration.

Except as otherwise provided, the provisions and prohibitions of this chapter shall be jointly administered by and the responsibility of the city's police department and department of development services, code enforcement division. The chief of police may adopt administrative rules and regulations which are consistent with the provisions of this chapter for the purpose of implementing the same.

(Ord. 1417 § 1 (part), 2008)

9.50.090 - Cost recovery for second response.

A. Any and all personnel who may be deployed by the city pursuant to this chapter shall be deemed to be on regular duty under the general supervision of the chief of police, fire chief, the director of development services or other city department director, and any officer or employee in charge under their respective commands and shall be entitled to any and all benefits provided by law or ordinance for such personnel as employees of the city, except that the rate of pay for such special security services shall be set forth herein. The pay for each employee thus employed during such employment shall be at his or her actual rate of pay. The chief of police or other department director, as the case may be, shall report to the chief financial officer the name of the person, firm, organization or corporation requiring such personnel, the names of the employees so employed and the number of hours of employment of each. The chief financial officer shall thereupon bill the person.

B. Whenever any enforcement officer issues a written warning to a responsible person to discontinue a noise violation, the responsible person shall be liable for the actual cost of each subsequent response required to abate the violation within seventy-two hours of the issuance of the written warning (response charge).

C. The bill for the response charge shall be served upon the responsible person within thirty days after the violation. If the responsible person has no last known business or residence address, the location of the violation shall be deemed to be the proper address for service. The bill shall include a notice of the right of the person being charged to request a hearing to dispute the imposition of the response charge or the amount of the charge.

D. The response charge shall be deemed to be a civil debt to the city.

E. All responsible persons shall be jointly and severally liable for the response charge regardless of whether or not they received a written notice.

(Ord. 1417 § 1 (part), 2008)

9.50.100 - Public nuisance.

A violation of this chapter by any person responsible for committing, causing or maintaining such violation shall constitute a public nuisance that shall be subject to the provisions of Chapters 9.39 and 9.42 of this title.

(Ord. 1417 § 1 (part), 2008)

9.50.110 - Infraction violation.

A violation of Section 9.50.030, 9.50.050 or 9.50.070 of this chapter by any person responsible for committing, causing or maintaining such violation shall constitute an infraction violation and the violator shall be subject to the provisions set forth in Section 1.16.010 of this code, including but not limited to the imposition of any and all criminal penalties set forth therein.

(Ord. 1417 § 1 (part), 2008)

9.50.120 - Misdemeanor violation.

A violation of Section 9.50.040 of this chapter by any person responsible for committing, causing or maintaining such violation shall constitute a misdemeanor violation which shall be subject to the provisions set forth in Section 1.16.010 of this code, including but not limited to the imposition of any and all criminal penalties set forth therein.

(Ord. 1417 § 1 (part), 2008)

9.50.130 - Civil fines.

Any person convicted of an infraction or misdemeanor violation under this chapter shall, for each separate violation, be subject to: (A) a fine in an amount not to exceed two hundred fifty dollars for a first conviction of an offense; (B) a fine in an amount not to exceed five hundred dollars for a second conviction of the same offense within a twelve-month period from the date of the first offense; and (C) a fine in an amount not to exceed seven hundred fifty dollars for the third conviction of the same offense within a twelve-month period from the date of the first offense. The fine for a fourth and any subsequent convictions of the same offense within a twelve-month period from the date of the first offense shall be one thousand dollars.

(Ord. 1417 § 1 (part), 2008)

9.50.140 - Additional penalties.

Nothing in this chapter shall preclude the city from pursuing any other legal remedies provided by this code or otherwise available to the city at law or in equity.

(Ord. 1417 § 1 (part), 2008)

APPENDIX B

CADNAA NOISE PREDICTION MODEL INPUTS

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12733 - Cedar Villas

CadnaA Noise Prediction Model: 12733-02_Test.cna
Date: 22.06.20
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Country	**(user defined)**
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Reference Time Day (min)	**960.00**
Reference Time Night (min)	**480.00**
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.00**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R01	75.5	75.5	82.2	80.0	0.0	0.0				5.00	a	6214573.10	2338729.94	5.00
RECEIVERS		R02	75.5	75.5	82.1	80.0	0.0	0.0				5.00	a	6214643.26	2338743.81	5.00
RECEIVERS		R03	76.0	76.0	82.7	80.0	0.0	0.0				5.00	a	6214710.00	2338738.79	5.00
RECEIVERS		R04	75.4	75.4	82.1	80.0	0.0	0.0				5.00	a	6214772.52	2338747.43	5.00
RECEIVERS		R05	73.8	73.8	80.5	80.0	0.0	0.0				5.00	a	6214861.77	2338765.92	5.00
RECEIVERS		R06	72.7	72.7	79.4	80.0	0.0	0.0				5.00	a	6214912.63	2338772.36	5.00
RECEIVERS		R07	74.7	74.7	81.3	80.0	0.0	0.0				5.00	a	6214940.17	2338708.83	5.00
RECEIVERS		R08	78.8	78.8	85.5	80.0	0.0	0.0				5.00	a	6214929.71	2338586.82	5.00
RECEIVERS		R09	78.2	78.2	84.8	80.0	0.0	0.0				5.00	a	6214935.54	2338531.94	5.00
RECEIVERS		R10	78.6	78.6	85.3	80.0	0.0	0.0				5.00	a	6214930.92	2338482.08	5.00
RECEIVERS		R11	73.2	73.2	79.9	80.0	0.0	0.0				5.00	a	6214917.85	2338294.73	5.00
RECEIVERS		R12	76.0	76.0	82.7	80.0	0.0	0.0				5.00	a	6214868.60	2338324.48	5.00
RECEIVERS		R13	74.9	74.9	81.5	80.0	0.0	0.0				5.00	a	6214797.44	2338294.73	5.00
RECEIVERS		R14	76.3	76.3	83.0	80.0	0.0	0.0				5.00	a	6214704.57	2338318.05	5.00
RECEIVERS		R15	75.4	75.4	82.0	80.0	0.0	0.0				5.00	a	6214649.69	2338304.58	5.00
RECEIVERS		R16	77.6	77.6	84.2	80.0	0.0	0.0				5.00	a	6214584.96	2338342.37	5.00
RECEIVERS		RXX	75.3	75.3	82.0	80.0	0.0	0.0				5.00	a	6214967.40	2338617.52	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time		
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)
SITEBOUNDARY		CONSTRUCTION	119.0	119.0	119.0	78.3	78.3	78.3	Lw	119				

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	8.00	a			6214542.76	2338692.55	8.00	0.00
					6214617.76	2338691.88	8.00	0.00
					6214687.76	2338691.26	8.00	0.00
					6214757.76	2338690.64	8.00	0.00
					6214827.76	2338690.02	8.00	0.00
					6214897.76	2338689.40	8.00	0.00
					6214918.76	2338689.21	8.00	0.00
					6214917.19	2338499.21	8.00	0.00
					6214916.03	2338359.27	8.00	0.00
					6214520.10	2338362.77	8.00	0.00
					6214521.46	2338527.75	8.00	0.00
					6214541.46	2338527.57	8.00	0.00

APPENDIX H
TRIP GENERATION EVALUATION

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS

This following form shall be used to acknowledge preliminary approval of the scope for the traffic impact analysis (TIA) of the following project. The TIA must follow the City of Rialto Traffic Impact Analysis – Report Guidelines and Requirements, adopted by the City Council on February 5, 2014.

City of Rialto

Traffic Impact Analysis

Scoping Agreement

Case No. _____

Related Cases -

SP No. _____

EIR No. _____

GPA No. _____

ZC No. _____

Project Name: Cedar Villas

Project Address: E. of Cedar Av. and N. of Miramont St.

Project Description: 22 single family detached residential DUs

	Consultant	Developer
Name:	Charlene So, Urban Crossroads	Lilburn Corporation
Address:	260 E. Baker St. Suite 200, Costa Mesa, CA	1905 Business Center Dr., San Bernardino, CA
Telephone:	949-336-5982	909-890-1818
Fax:	NA	NA

Cedar developed. Under 50 trips in peak hours. No further study required. Note: relinquish access rights along Cedar except at private street. streets are substandard for public and are private streets

west side of Cedar is Fontana

Fire access limited.

1. Trip Generation Source: ITE, 10th Edition Trip Gen Manual (2017)

Existing GP Land Use R1C Proposed Land Use R3

Current Zoning: R1C Proposed Zoning: R3

Total Daily Project Trips: 208 (Table 1)

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	0	0	0	4	12	16
PM Trips	0	0	0	14	8	22

Internal Trip Allowance Yes No (0 % Trip Discount)

Pass-By Trip Allowance Yes No (0 % Trip Discount)

For appropriate land uses, a pass-by trip discount may be allowed not to exceed 25%. Discount trips shall be indicated on a report figure for intersections and access locations.

2. Trip Geographic Distribution: N 30 % S 70 % E 0 % W 0 %

(Detailed exhibits of trip distribution must be attached with Trucks as a separate exhibit)

3. Background Growth Traffic

Project Completion Year: 2020 Annual Background Growth Rate: 2 %

Other Phase Years NA

Other area projects to be considered: _____

(Contact Planning for Lists. Correlate projects to exhibit map and also indicate which projects have been included in study area forecasts for existing + background growth + project + cumulative)

Model/Forecast methodology: NA

4. Study Intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies received.)

1. NA
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

5. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies received.)

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

4. _____ 9. _____

5. _____ 10. _____

6. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or within one-mile of another jurisdictional boundary? X YES ✓ NO

If so, name of Jurisdiction: Fontana & County area Bloomington

7. Site Plan (please attach 11" x 17" legible copy)

8. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (to be filled out by the City of Rialto Public Works Department) (NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing un-signalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

_____

_____

_____

_____

9. Existing Conditions

Traffic count data must be new or within one year. Provide traffic count dates if using other than new counts.

Date of counts: _____

NOTE Fees are due and must be submitted with, or prior to submittal of this form. The City will not process the Scoping Agreement prior to the receipt of the processing fee.

Fees Paid: _____ Date _____

Recommended:

Scoping Agreement Submittal date July 31, 2019

Scoping Agreement Resubmittal date _____

Applicant/Engineer — Date: July 31, 2019

Land Use Concurrence:

Development Services Department — Date: 8/6/19

Approved by:

Public Works Department — Date: 8-5-2019

NOTE:

The Applicant/Engineer acknowledges that the Scoping Agreement is intended to assist in the preparation of any required TIA. It is preliminary in nature and the City does not have sufficient data to determine the ultimate conditions that may be imposed for the project. It does not provide nor limit the requirements imposed on the Project but is intended only to provide initial input into the parameters for review of the traffic generated by the Project and the initial areas to be considered and studied. Subsequent changes to scope of required analysis to be included in the TIA may be required by the Transportation Commission, Planning Commission, and/or the City Council upon Public Works Director/City Engineer review and approval.

URBAN CROSSROADS

260 E. Baker St. | Suite 200 | Costa Mesa, CA 92626 | (949) 660-1994
urbanxroads.com

July 30, 2019

Mr. Azzam Jabsheh
City of Rialto
335 W. Rialto Avenue
Rialto, CA 92376

SUBJECT: CEDAR VILLAS SCOPING AGREEMENT

Dear Mr. Azzam Jabsheh:

Urban Crossroads, Inc. is pleased to submit this scoping letter to City of Rialto regarding the Scoping Agreement for the proposed Cedar Villas development ("Project"), which is located east of Cedar Avenue and north of Miramont Street in the City of Rialto. The Project is to consist of 22 single family detached residential dwelling units. This letter describes the draft proposed project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed project study area and analysis locations.

A preliminary site plan for the proposed Project is shown on Exhibit 1. It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2020. Driveway 1 on Cedar Avenue is assumed to provide full access to the Project.

TRIP GENERATION

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017) for Single Family Detached Residential (ITE Land Use Code 210) was used. Table 1 presents the trip generation rates and the resulting trip generation summary for the proposed Project. As shown in Table 1, the Project is anticipated to generate a net total of 208 trip-ends per day with 16 AM peak hour trips and 22 PM peak hour trips.

TRIP DISTRIBUTION

The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system. The Project trip distribution patterns are graphically depicted on Exhibit 2 for the proposed Project.

ANALYSIS SCENARIOS

The Project is anticipated to generate fewer than 50 peak hour trips. As such, additional traffic analysis has not been recommended consistent with the Existing A of the City's TIA guidelines.

If you have any questions, please contact me directly at (949) 336-5982.

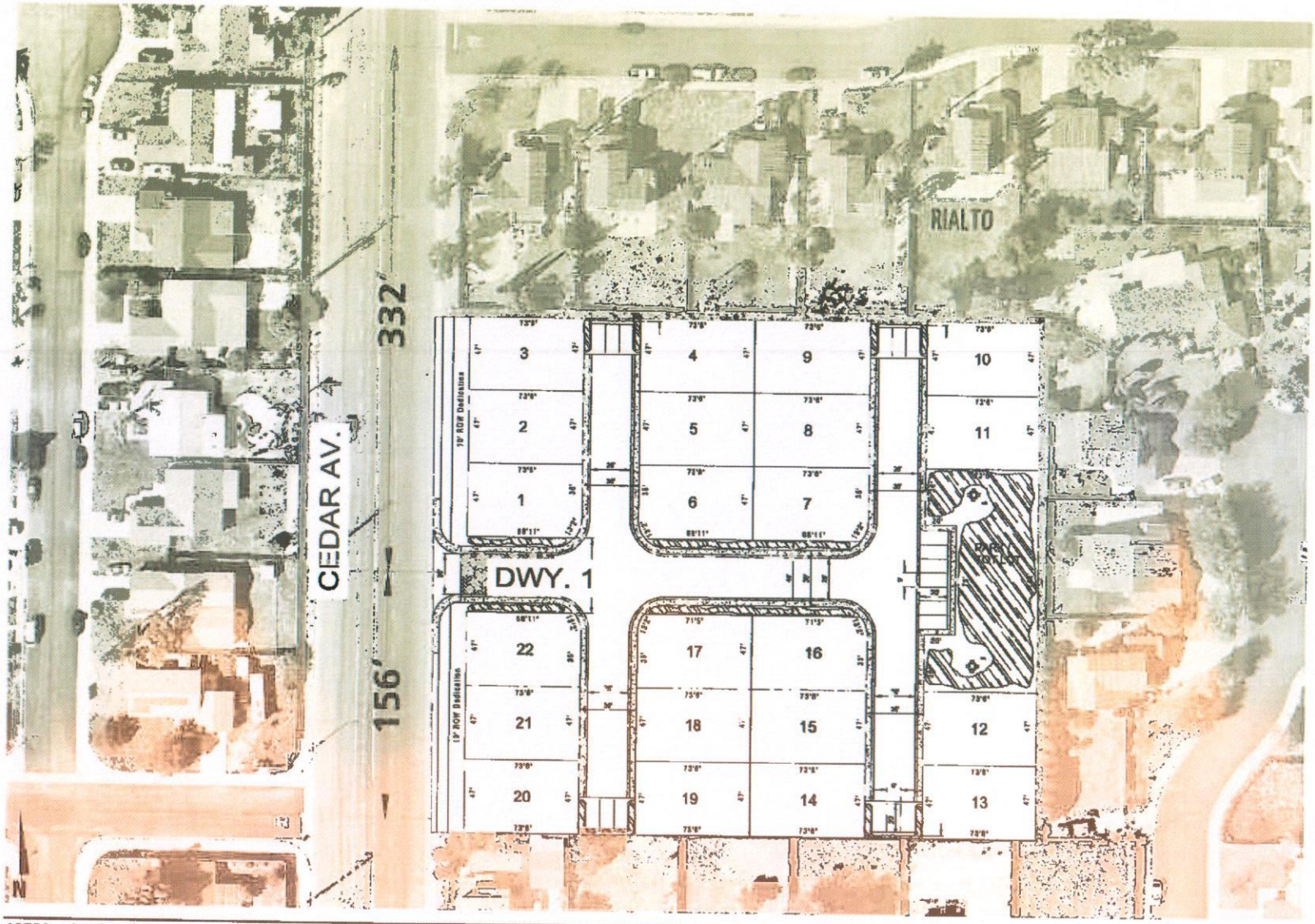
Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Senior Associate

EXHIBIT 1: PRELIMINARY SITE PLAN



12732 - siteplan.dwg

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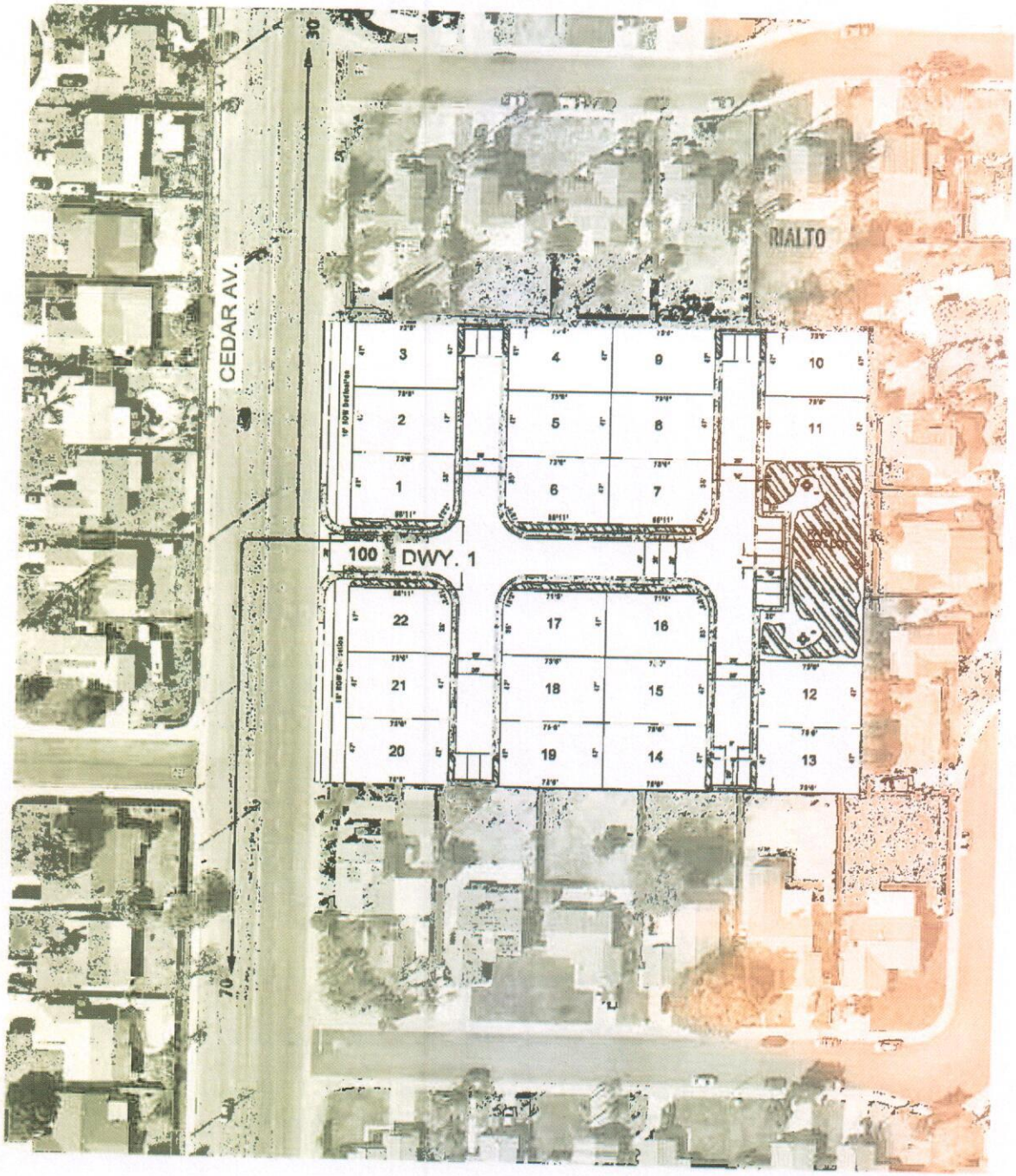
EXHIBIT 2: PROJECT TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

N

Table 1

Project Trip Generation Summary

Land Use	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates[1]									
Single Family Detached Housing	DU	210	0.19	0.56	0.74	0.62	0.37	0.99	9.44

Land Use	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Summary									
Cedar Villas	22	DU	4	12	16	14	8	22	208
TOTAL RESIDENTIAL			**4**	**12**	**16**	**14**	**8**	**22**	**208**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] DU = Dwelling Units